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A STUDY OF THE MODIFICATION OF PARENTAL ATTITUDES TOWARD AN UNDERSTANDING OF MENTALLY RETARDED CHILDREN.

BY- HARRIS, DALE B. SHECHTMAN, AUDREY

MINNESOTA UNIV., MINNEAPOLIS, INST. OF CHILD DEV.

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THE EFFECT OF CONTACT WITH PERSONNEL OF A DAY CARE CENTER WAS COMPARED WITH VARIOUS METHODS OF COUNSELING IN ASSISTING PARENTS OF TRAINABLE RETARDED CHILDREN TO ADJUST TO THE FAMILY PROBLEMS CREATED BY THE RETARDATION. MAJOR OBJECTIVES WERE--(1) TO COMPARE ATTITUDE CHANGE AMONG PARENTS WHO OBTAIN COUNSELING THROUGH (A) INCIDENTAL CONTACTS WITH PERSONNEL IN A DAY CENTER AND (B) A SMALL GROUP DISCUSSION MEETING HELD REGULARLY AT THE DAY CARE CENTER, (2) TO COMPARE ATTITUDE CHANGE AMONG STUDENTS WHOSE PARENTS WERE SUBJECTED TO THE VARYING COUNSELING PATTERNS, (3) TO COMPARE FACTUAL INFORMATION GAINS AMONG THE THREE PARENT GROUPS, AND (4) TO ANALYZE THE CHANGE AMONG PARENTS IN THE THREE GROUPS IN RELATION TO THE PERSONALITY OF THE PARENT, THE PARENT'S LEVEL OF EDUCATION, AND THE SEVERITY AND TYPE OF DEFECT OF THE CHILD. THE FINDINGS WERE ESSENTIALLY NEGATIVE. NO EVIDENCE COULD BE DEVELOPED THAT ONE METHOD WAS SUPERIOR TO OTHERS, OR, INDEED, THAT ANY GROUP SHOWED SIGNIFICANT GAIN ON ANY INFORMATION, ATTITUDE, OR SKILL VARIABLE, NEVERTHELESS, THE INDIRECT EVIDENCE ACQUIRED SEEMS SIGNIFICANT. PARENTS SEEM TO HAVE BENEFITED IN SELF-FEELING AND SELF-ATTITUDE THROUGH AGENCY CONTACT. MORE LENGTHY CONTACT BETWEEN AGENCIES AND PARENTS IS RECOMMENDED. (JL)

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**A STUDY OF THE MODIFICATION OF PARENTAL ATTITUDES TOWARD AN
UNDERSTANDING OF MENTALLY RETARDED CHILDREN**

April 1, 1958 to August 31, 1959

**U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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Dale B. Harris, Ph.D.

Project Director

with the assistance of

**Audrey Shechtman, M.A.
Research Fellow**

Institute of Child Development and Welfare

College of Education

University of Minnesota

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States Office of Education, drawn with the
Regents of the University of Minnesota.**

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Dale B. Harris, Ph.D.
Director and Professor
Institute of Child Development
University of Minnesota
30 August, 1959

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GENERAL STATEMENT OF THE PROBLEM

Introduction. One of the early practical objectives of scientific child study was the guidance of parents and the improvement of child rearing. Once facts about child development become available, how best to influence parents' use of these facts became a matter of considerable concern. Parent Education as a field and as an activity came into being. But facts about children became available more quickly than facts about how best to influence parents' attitudes and behavior toward children. These latter activities remained largely a matter of opinion and over the years have become the subject of considerable controversy. Relatively few thorough studies of influence techniques have been made.

The traditional parent education program has assumed that study, lecture, and question-answer procedures will increase knowledge and change attitudes toward child behavior. Group work theorists have challenged the effectiveness of knowledge alone. They have insisted that interpersonal relationships are likely to improve only if the person has gained greater control of his own psychological adjustments through frank discussion among peers in the "safe" climate provided by the skills of the group worker.

With the rapidly increasing child population of the last fifteen years has come a new and poignant problem for parent education. As the numbers of mentally retarded children have increased along with the general child population, society has outrun its usual facilities for care and education of these children. New understandings of human development and changing philosophies of welfare and education have suggested new approaches to these children and their families. In this regard too, society's commitment has run ahead of facilities and trained workers. A larger number of severely limited children remain in their homes and communities and has posed a whole area of problems and need for parent education and guidance.

Relation of the Problem to Educational Programs for the Trainable.

There is a decided limit to what can be achieved educationally with trainable children, as we ordinarily understand the term "education". The objectives for trainable retarded children are as often phrased in terms of parent education as of child training. Because the parent of the trainable child usually finds nothing in his or other's experience to guide him, he often proceeds blindly in attempting to solve problems of child training, relations with neighbors, and difficulties created with his other, normal children. Strong emotional reactions almost always enter. Social workers are convinced that only methods designed to deal directly with feelings will help to change emotion-produced behavior. Educators are more inclined, perhaps, to rely on study and discussion - intellectual approaches - for the solution of problems requiring the formulation of decisions. The psychiatrist relies on personal counseling. In any event, group methods are more feasible than expensive interview or counseling procedures. Either type of group method is to be preferred to such guidance as occurs in casual or unsolicited contacts between worker and parent, if no greater gains by the individual interview method can be demonstrated.

This study has attempted to compare three approaches to helping parents of trainable retarded children to adjust to and plan for the problems which arise because there is such a child in the family. The following educational methods were investigated: (a) informal counseling through incidental contacts with personnel of the day care center in which the child is receiving skilled guidance, (b) "group-therapy" type procedure, and (c) a program of formal lectures followed by question-answer and discussion periods.

REVIEW OF THE LITERATURE

Brim (1957) has recently surveyed all the research literature on parent education. He concludes: (a) there is evidence that factual information can be substantially increased by reading, lectures, and discussion, (b) there is evidence (some of it equivocal) that parental attitudes toward child-rearing practices can be modified through the lecture method, and through group discussion procedures, and (c) there is virtually no evidence as to the transfer of such knowledge and attitudes to parents' actual handling of children. Parents, it is true, often report increased subjective experience of success and satisfaction following such classes.

The most frequent research design has been to test groups before and after instruction in order to evaluate the effectiveness of a single educational technique.¹ Some few studies have tried, at least obliquely, to evaluate leadership methods. The control group has been used only rarely. In view of the results of Balser, et.al. (1955), who found that a control group showed greater change over time than the experimental group, such an omission could easily lead to false conclusions about the effectiveness of the techniques being investigated.

Of the studies measuring groups before and after instruction, the pioneer study and still one of the most extensive is that of Davis and McGinnis (1939). Starting from the point of view that the primary purpose of parent education is to "influence the attitudes, behavior and practice of adults in the direction believed most desirable by the best contemporary opinion" (p.3), they attempted to evaluate the effect of attending child study groups on parent attitudes toward children's behavior. Parents were tested with a Behavior Schedule consisting of fifty common behavior situations, each specific to age and sex. Tests were administered before and after the parent education sessions. In a rank ordering of the traits, it was found that there was little evidence of change over time. Altered attitudes tended to be related to education, with more change occurring in mothers of the lower educational levels. Rural mothers tended to be more persistent in their opinions than did city mothers. While the initial testing showed that mothers tended to agree with Wickman's teachers in evaluating the seriousness of specific behaviors, there was some change in attitude concerning the relative seriousness of the problems after the period of instruction. There was a definite trend to consider such problems more serious in older than in younger children and slightly more serious in boys than in girls. Major flaws in design were the absence of a control group and the heterogeneous character of the sample, which was composed of a combination of mothers, a few men, and "some occasional childless person - teacher, nurse, or social worker" (p.23). The population was distinctly skewed toward the upper educational and occupational levels, with approximately two-thirds of the group falling in the upper occupational levels and about one-fourth having college degrees.

In a further investigation of parent attitudes toward delinquent, neurotic, and personal-social traits, Davis and McGinnis (1939) inquired into the effectiveness of training as against lay leaders in bringing about change. Trained leaders succeeded in teaching the relevance of mental hygiene to even

1. Of 23 studies reviewed by Brim, only two compared the effectiveness of two or more educational techniques.

the most underprivileged mothers, while lay leaders failed in this respect. In the area of attitude change it was found that city mothers showed a significantly greater tendency to agree with the experts of Wickman's study after the instruction period; rural mothers showed only a negligible improvement. All parents considered delinquent traits to be more serious than neurotic or personal-social traits. These traits were believed to be more serious in older than in younger children, especially in the delinquent and personal-social areas. Delinquent traits were evaluated as more serious in girls and neurotic traits were considered to be more serious in boys.

Jack (1932), in her early study, tested 28 mothers who had had no previous training in parent education at the beginning and end of a child study course. The interview form used contained sections on physical habits, aspects of personality, and methods of control. Post-testing indicated that improvement had occurred in these areas, especially on questions dealing with play and discipline. Mothers with low initial scores showed the most improvement. A methodologically interesting attempt was made to measure the reliability of the questionnaires used by comparing answers given on the interview form with parallel questions on the questionnaire. Correlations indicated that statements relating to routine habits were fairly reliable while those dealing with personality problems were less so. Statements on management and on methods used to deal with behavior problems showed the lowest reliabilities.

In a recent exploratory study of the same general type, Chandler (1955) investigated the relationship between parents' role concepts and standards of child behavior, determining the changes that occur after an eight week reading-study-discussion course for mothers of elementary school children. Results indicated that participating parents became more "developmentally" oriented both in parent role concepts and in standards for child behavior. Parent role concepts were found not to be related to these standards.

In a study of 57 mothers interviewed and counselled while attending child health stations, Brim (1954) found change toward greater permissiveness in dealing with eating problems related to the relative satisfaction to be gained from such change, degree of dominance characterizing the mother's child-rearing habits, her exposure to favorable or unfavorable advice concerning change, and encouragement or approval of her spouse.

Collins (1954), using the critical incident technique in a study of parent attitudes relating to child management, infers attitude change from reports of critical incidents given by 17 mothers attending a two week training program for parents of hearing-handicapped pre-schoolers. Such incidents, rated on a five-point scale for each of eight Fels Parent Behavior variables, showed change in the direction of greater freedom, free growth, and stimulation. The general trend was toward more permissive behavior and more relaxed attitudes. Similarly designed studies showing attitude change in a positive direction are those of Hedrick (1934), Cooper (1947) and Hale (1955).

In an early comparative study, Schaus (1932) tried to determine the relative advantages of lecture and discussion as methods of parent education. Six classes were organized, three of which received information via the lecture method and three in discussion sessions. Groups were compared for memory of subject material, changes in parent and child behavior, attendance, and use of libraries. On the basis of tests given before and after the course, it was found that the discussion group made slightly more advance in the acquisition of subject matter than did the lecture group.

Of the 23 studies reviewed by Brim, only two made use of controls. Typical of this research design is the Balser et al., study (1955) of the efficacy of mental hygiene workshops. Three experimental workshop groups and three control groups of parents and teachers from four different communities were studied. Because an earlier study suggested that results might be influenced by a group's knowledge that it was functioning as a control, only one group was told that it was serving as such. The others were under the impression that they were taking tests for validation purposes. All groups were given a battery of psychological tests at the beginning and end of the workshop period; test responses were analyzed to determine the extent to which attitudes related to mental health were altered. Experimental groups in this study showed greater change in a positive direction than did controls. Parents showed a significant tendency toward greater overall change than did the teachers of the experimental groups.

Balser also investigated the effect of differential presentation of materials. One of the experimental groups was conducted by a dynamically oriented psychologist, while the other two were headed by an analytically trained psychiatrist. In spite of varied content, approach, and instruction, no statistically significant differences appeared between groups led by the psychiatrist and the psychologist.

In an excellently designed study, Shapiro (1956) measured the effect of a series of group discussions on child rearing attitudes. Control groups were matched to the experimentals on occupation, education, religion, age and sex. Additional matching was done on size of family, age distribution of children, annual income, and nativity. Parents were tested before and after with a questionnaire on parental relationships. Data on actual behavior was available through ratings made by a public health nurse and a psychiatric social worker who visited the homes of the participants. Findings of the study were in the expected direction, with members of the experimental group showing significant change in the direction of increased good judgment, less authoritarianism, and the like. Amount of change appeared to be related to attendance at meetings and "more desirable" initial scores on questionnaires and ratings. Here again, subjects were self-selected. A more serious criticism might be leveled at the investigator, who served as discussion leader himself without taking steps to control the biasing effect this may have introduced. Sample size was small (25 individuals representing 15 families). This study provides constructive suggestions for further research.

Andrew (1954) compared group-oriented, leader-authority, question-answer, and leaderless-group approaches in presenting materials in a workshop setting. All experimental groups showed significant changes on a thirty item test of factual material while controls did not. No attempt was made to measure behavioral change because the author believed it pointless to expect one workshop on mental health to produce great alterations in the behavior of participants. Of the four methods studied, the leaderless group showed the most change over time. There were no significant differences between the outcomes of groups led by other types of resource persons. A group discussion session seemed to add little to the effectiveness of the workshop and appeared to confuse people more than it contributed to their understanding. In evaluating this comment one must remember that the purpose of a discussion group is not to give information but to change attitudes. Whether or not to make use of the discussion method is at least partially dependent on the goals one is attempting to achieve. Andrew concludes that the workshop is an effective method for presenting information, lectures being most useful for imparting factual material.

Tamminen (1957) also established the superiority of "leaderless group" discussion following parent-education TV broadcasts in contrast with solitary viewing in producing attitude change. His study is virtually unique in attempting (although indirectly) to relate parent attitudes to child behavior. He showed that children of mothers rating highest on his initial attitude schedule were rather different in conduct (as evaluated by teachers) when contrasted with children of mothers scoring lowest on his initial attitudes test. This was true, even though the contrasting groups of mothers were carefully matched in socio-economic status.

An overview of the reported research shows that most studies, regardless of the educational techniques employed, find some evidence of positive change. No study reports completely negative results. Whether this change is the resultant of parent education may be doubtful, especially since so few studies make use of control groups. Too, the simple fact of taking part in a research project plus the self-selection factor might tend to motivate subjects toward greater change. Controls used after the manner of Balser would correct for this. Small samples were used in most of the studies reviewed, with no attempt at replication of the design. Since the approaches used by different researchers vary so widely, this is a serious flaw; results of separate studies cannot be considered cumulative. Some studies find that the individuals with the lowest scores at initial testing show greatest change over time. Such a finding should be regarded at least in part a function of the quantity of improvement possible. Varied results are obtained where the effectiveness of different types of leadership is considered. Perhaps the best view to take when evaluating such studies is to consider the appropriateness of the approach in relation to the type of goals to be achieved.

In view of the pressing nature of the problem of mental retardation, it is surprising that no study has been made of the effectiveness of parent education techniques to this area. The need for such research is well recognized. Weingold and Hormuth (1953) regard group guidance for the parents of mentally retarded children as one of the most effective tools to bring about a more adequate adjustment of the family. Weingold found that families with retarded children seem to be much more intensely beset with problems of marital conflict and sibling rivalry. The presence of the retarded child seems to accentuate personality difficulties existing in family members. Group pressures tend to force the family of a retarded child to withdraw from social contact and isolate itself; thus, attention is focused more and more on the child, accentuating the existing adjustment problems. Weingold points out the great therapeutic value effected by the feeling of belonging to a group of parents whose problems are being handled by their own means.

Coleman (1953) emphasizes the need for parents to come to an acceptance of themselves as parents of a mentally deficient child, without accompanying feelings of guilt. Acceptance of the retarded child and adjustment of the parental level of aspiration for the youngster also present distinct problems. Institutionalization and providing for the child's future are important decisions that should be dealt with by parent educators. A few studies (Rheingold, 1945; Jensen, 1950; Stone, 1948) aimed at classifying parental types of awareness of retardation observed movement toward greater awareness and acceptance during the course of a short interview method and suggest that, when this technique is used, parents tend to reach quick and appropriate decisions about the welfare of their child. Too, they work better with social workers. From this finding we might infer that change may result from a single or very few counseling sessions.

BACKGROUND OF THE STUDY

The city of Minneapolis provided a unique opportunity for a study of parent education techniques applied to problems of parents with a handicapped child at home. For some years there has been keen awareness of the problem of the home care and guidance of the mentally retarded child. An active group of parents has organized itself and has been instrumental in establishing a national organization. Through its meetings it has called attention to the problem and to the dearth of adequate facilities for education of retarded children.

Into the gap demonstrated by this group of parents several local agencies have stepped. One of these, the Edward F. Waite Neighborhood House, formerly the Elliot Park Neighborhood House, a Red Feather agency, early made a significant contribution. Having had long experience in nursery care for pre-school children, it established a Day Care Center for younger mentally retarded children, particularly the more severely retarded or "trainable" group. Effective leadership in care for these children led quickly to an awareness of a need to help parents with the many problems of family life, child care, sibling relations, and community relations which hinge upon the presence of a retarded child in the home. As some parents made other arrangements for children, as new parents entered the project, as other parents moved away, the staff of the agency became aware that new persons were continually presenting old problems for which no effective solutions have been devised. The director of this agency called attention to the need for research on such a problem, believing only from such research can really effective programs be developed. Discussions were held with persons in the community, into which staff members of the Institute of Child Development were drawn, and eventually a study was designed which was accepted by the Board and undertaken by the Institute on the basis of a contract with the U. S. Office of Education, then actively promoting research work on various phases of care and guidance of mentally retarded children. This report summarizes that study.

GENERAL HYPOTHESES

The study designed was to focus on the following general propositions:

1. Parents of mentally retarded children, indeed parents generally, can be helped to provide effective care and guidance of their children. This help should result in more realistic appraisals of the child and his abilities and opportunities, greater assurance and comfortableness in caring for the youngster in the home setting, and better personal adjustment to the issues presented by such children.

Some methods of parent education may be more effective than others. Therefore, findings from such a study should throw light on which methods can most effectively benefit parents' attitudes and understandings and should therefore have widespread significance for work with families of normal as well as mentally retarded children.

Service agencies which need to provide the most effective help on a constrained budget can be assisted in their planning by results of such a study. Resources are more likely to be allocated to programs if it can be demonstrated that professed goals can be obtained through appropriate methods.

It should be possible to examine the methodological significance of approaching parent-child interactions through direct observation, in relation to the more usual method of examining parents' knowledge and attitudes through paper and pencil measures.

DESIGN OF THE STUDY

The general procedure was to compare three methods of parent education, using groups of parents of trainable children attending a day care center as follows: (1) a "low contact" group of parents limited to informal and incidental counseling by the director and staff of the day care center and such social psychological benefits as arise from having the child out of the home and under skilled guidance. This group attended no parent meetings. (2) A small group discussion type meeting led by a social worker skilled in group therapy techniques. (3) A formal program in which a different professional person each meeting lectured on some aspect of mental retardation, followed by a question-answer and discussion period.

Setting for the study. The Edward F. Waite Neighborhood House Day Care Center serves about 30 children four to ten years of age, with IQs ranging from 30 to 50. The families of these children are drawn from predominantly lower-middle and upper-lower class people. In the past these families have been most cooperative with research workers. Both the parents and the staff of the Day Care Center have been eager to have research done as a basis for planning a program of parent education in future years.

In the later summer of 1958, parents were randomly assigned to participation in one of the treatment groups. The design called for about ten families, or twenty parents in each group. It was expected that attendance at meetings would be good; the parents were in general highly motivated and in the past attended occasional group meetings very well.

Beginning in the fall of 1958, the three groups were conducted according to the following plan. The group therapy "treatment group" met twice a month for five months. The formal lecture "treatment group" met twice a month for five months. The "low-contact" group had their children in the day care center on the same basis as the other groups but received guidance only through incidental contacts in delivering and picking up the child, or as they individually request to discuss specific issues or problems.

It was planned to use as a control a fourth group of about 25 families on the Center's waiting list of eligible children but unable to attend because of transportation difficulties or other reasons. Some particular difficulties arose with this group. Although it was clearly and specifically explained to this group that their participation in the study was invited solely in the interest of helping parents of mentally retarded children generally and that the project guaranteed no special privilege to parents who participated in the study, the expectations, nevertheless, of these control parents were high that their youngsters might sooner enter the Day Care Center or otherwise receive preferential treatment. Some dropped from participation when the expected earlier date of entry or resolution of their transportation difficulties did not materialize. Others agreed to continue participation only if they could be assured of some special help with their pressing problems later in the study. It was finally agreed to supply a worker who would conduct a series of discussions with them on the same basis as with the experimental groups, after the conclusion of the study proper. As a result, this control group was not as large as had been anticipated. Also, seven cases were lost from this group through placement of the child in a boarding home, institution, or another school while the experiment was in progress.

The statistical design. The statistical design called for groups randomly drawn and with a pre-test and post-test and the use of variance and co-variance procedures for analyzing the gains on the several instruments. Because of the very small population available for study and the expected inevitable attrition of these samples, it was expressly intended to insure cooperation from the parents through intensive personal contact rather than starting with a large population (which was not available anyway). It was hoped that personal contact methods used on an intensive basis might keep participation of these few parents close to 100%. Table 2 in Appendix A indicates the "cost in time", minimally, for a typical case. This estimate of hours of actual testing per case does not include the many telephone and personal calls and other "promotional" work which inevitably become necessary. Other sources of attrition which could not be controlled also developed. One mother died after the start of the study. There was a separation or two, the father dropping out on this basis. A father was institutionalized and the mother terminated her relationship to the project. Three families moved away. Several families were able to effect permanent placement of their retarded children and dropped from the study for this reason. As in most studies of this type, men simply did not participate as readily as women. Thus, the hoped-for ten complete families in each sub-sample could not be realized.

It was hoped that this study could be repeated in the city of St. Paul where the Wilder Day Care Centers, a division of the Wilder Associated Charities, were operating a similar program of care for mentally retarded children. In St. Paul however, it was found that the program was rather differently organized and administered. No waiting list for the Day Care Centers was maintained, and it was not possible to locate families to serve as controls, though considerable effort was made through the County Welfare office. Indeed, the "low contact" group effected very casual and infrequent contacts, as the Child Care Center there undertakes no formal counseling program. This group could almost be considered a control group, but with children in the Day Care Center. Consequently, while the St. Paul groups came into the study very willingly there was considerably less preparation than in Minneapolis. As a consequence only three experimental groups were set up and carried through. In the tables which present results, the St. Paul data are presented separately from the Minneapolis data for the heuristic value which trends in their results may have. Clearly, the study is not replicated in a statistical sense.

General procedure. Data collection proceeded in three blocks. First, there was a pre-program evaluation of status prior to parent education and counsel. Next, there was the continuing observation of parents in their group meetings and of children in the nursery groups during the formal study period by various members of the project staff and of the Day Care Center staff. Third, there was the post-program evaluation immediately at the close of the parent education program, which actually continued for several months because of the difficulty in keeping people at the arduous task of filling in instruments and meeting appointments. Table 1, following, presents the time schedule for the project on the basis of actual occurrence.

The data breakdown according to their character into three broad headings. Qualitative data on the families, obtained by professional workers include studies of home background made by the director of the Day Care Center and social workers before the child was admitted to the Day Care Center. More objective data on parent attitudes were obtained in a guided interview. Each parent's reactions to a number of points concerning retardation and his retarded child were obtained. A battery of self-administered paper and pencil schedules were completed by parents in small groups and, when the occasion required, individually.

Table 1. Time Schedule of the Project

Period	Experiment A	Experiment B
April-June, 1958	Conferences with representatives of agencies Tests of Mental Retardation. Information drawn up and standardized. Preliminary work on observational methods for experimental mother-child interactions. Pretesting of parents on antecedent and experimental factors in small groups and individually.	Conferences with representatives of agencies
July-September, 1958	Case records of social work contacts with members of groups read and evaluated. Initial interviews of mothers. Observations in experimental situations begun, both in the laboratory and in the home.	Arrangements completed to duplicate Experiment A
October, 1958	Interviews and observations completed. Lecture and discussion groups begun.	Organizational meetings of parents who would be involved in the study.
November, 1958	Initial behavior ratings on children completed.	Case records of social contacts with members of groups read and evaluated
December, 1958	Lecture and discussion groups continued.	Pretesting and interviews begun.
January, 1959	Lecture and discussion groups continued.	Pretesting, and interviews completed. Observations begun. Initial ratings of children completed. Lecture and discussion sessions begun.
February, 1959	Lecture and Discussion groups continued	Observations in experimental settings completed. Lecture and discussion sessions continued.

Table 1 (continued)

Period	Experiment A	Experiment B
March, 1959	Retesting of parents completed; final interviews and observations begun. Lecture and discussion groups completed.	Lecture and discussion.
April, 1959	Statistical records transcribed. Final behavior ratings on children completed. Final interviews and observations continued.	Lecture and discussion sessions continued.
May, 1959	All final assessments completed on subjects still cooperating.	Lecture and discussion completed. Retesting begun. Observations in experimental situations begun. Final behavior ratings on children completed.
June, 1959	Statistical analysis initiated.	Retesting completed. Observations in experimental situations completed.
July, 1959	Statistical analysis continued, waiting on completion of data from Experiment B.	Final home observations completed. Statistical data transcribed.
August, 1959	Statistical analysis completed for both experiments.	

These instruments were obtained both before and after the study and were scored in a manner to be detailed shortly.

Observations of parent-child behavior both before and after the study were made in three settings: (1) a 25 minute free-play situation with standard toys and play equipment; (2) a test situation in which the mother was assigned the task of teaching the child simple but, for the child, difficult task, and (3) a home observation involving a child care routine common to all children. For this latter purpose, the bedtime period was selected. Finally, through a post experiment contact with each mother, a statement of her reaction to the study as a whole was obtained.

The lecture series. Coverage of the broad area of mental retardation and problems involved in it, was desired in the series. Topics and lecturers were selected to present to the parents an over-all view of mental retardation, its nature and problems. Lecturers were highly qualified professional leaders in the Twin Cities who gave their time to this important task. Topics were as follows:

Lecture 1: A psychologist spoke on the general area of mental deficiency, including background information. Parents were told about the incidence of mental retardation, different clinical types of deficiency, and what few positive facts are known about mental deficiency. The probability of having a second retarded child and other similar questions were considered.

Lecture 2: A nursery school principal spoke about the wise selection of toys and play equipment for the retarded child. She stressed particularly the discrepancy between the interest and the size of the child and the need to provide simple but sturdy play materials.

Lecture 3: The director of a school for mentally retarded youngsters and a psychologist who has dealt extensively with both parents of retarded and normal youngsters with behavior problems discussed behavior problems of the retarded child and how to manage them. She emphasized the importance of realizing the mental level and capacity of the child and adjusting one's expectations to the child's abilities. She stressed firmness in handling and consistency in dealing with the child. She also emphasized the fact that each parent must decide for himself what is right for children growing up in the family in which they live.

Lecture 4: A school psychologist with experience in special education discussed the educational potentials of these youngsters, distinguishing between trainable and educable retarded, discussing opportunities in special classes, and clarifying certain technical concepts as mental age.

Lecture 5: A psychiatrist from a child guidance clinic spoke on general management of the retarded child, dealing especially with the use of tranquilizers and other drugs as a means of handling hyperactivity, and the use of stimulants for the lethargic child.

Lecture 6: An authority in social welfare spoke on the impact the retarded child has on his family.

Lecture 7: An educational psychologist discussed vocational possibilities for the retarded child, especially of the educable retarded child. This topic was pertinent because some of the parents had youngsters who were borderline and might conceivably be able to function under supervision in the community.

Lecture 8: Two social workers, one each from the Hennepin County and the Ramsey County Welfare Boards, discussed community facilities available for the retarded child and agencies to which the parent could go when he requires information, counselling, or was interested in placement of the youngster.

Lecture 9: The chief social worker at one of the state schools for retarded children spoke on institutional facilities, describing the procedures followed in admitting a child, the kind of preparation the parents could provide for the child before placement, visiting privileges, and the like. She also enlarged on some of the state laws having to do with state guardianship and placement of the youngster.

Lecture 10: The Project coordinator, a psychologist, summarized the preceding nine lectures, and attempted to tie together the high points made in previous lectures, in terms of the developmental principles they represented. This period was also used as a question-and-answer period about the research project generally.

The usual lecture procedure of presenting content of presumed interest to the parents on a relevant topic, followed by an opportunity to raise questions which the speaker answered, some discussion developed among members of the group, depending upon the facility of the speaker in eliciting such discussion. All the lecture sessions were of high quality, the adequacy of material presented being guaranteed by the careful selection of the lecturers, all of whom were skillful in speaking to parent groups. Material was relevant to parents' needs, adequately and interestingly presented with adequate illustrations. The lecture program in both cities was at a uniformly high level.

The discussion groups. The leader for the discussion group meetings was a social worker who had special experience in group work, including group therapy, and who had some training in working with retarded youngsters and their parents as well as a considerable background in child development theory and research. He had previously conducted a similar series of sessions with another small Minneapolis group. The group size (theoretically, ten pairs of parents, but in practice never meeting this) was rather larger than would have been desirable, but to complete the research in the available time it was found necessary to conduct only one such group in each experiment. The first meeting was organizational; time of meeting, the question of refreshments, topics to be discussed at each meeting and particular areas of interest were talked about. The purpose of the meeting was explained as free discussion of problems and concerns in various areas to mental retardation, with a view toward greater understanding of the problem. In practice, no factual information was offered unless members of the group contributed such information. The meetings were conducted as discussions of common problems experienced in guiding mentally retarded children in the family. It turned out (somewhat unfortunately for the experiment, it proved!) that several in experiment A had had some previous parent education study group experience and tried to move the discussion leader into the role of "expert" lecturer and question-answerer. A distinct "tug-of-war" developed; nevertheless, attendance continued at a reasonably high level.

An additional comment on the interesting character of the group is in order. Several distinct "personalities" and "roles" quickly developed. For example, one member became the "expert", to whom questions were referred when the nominal leader attempted to maintain a "problems-discussion leader"

role. Another served as a confidante for parents when they became worried. A third took the role of unofficial social chairman. Although prepared to guide the group through a series of personally-oriented discussions roughly paralleling the topics of the lecture section, the leader reported that such free-ranging discussions as did occur took on principally the character of social meetings, with little reference to personal or family issues or problems of such as dealing with behavior problems, sibling relations, interpreting retardation to neighbors, relatives and friends, the question of institutional placement, and the like.

By contrast, the discussion group in Experiment B developed more in line with the intent of group leader and of the project. Although slightly smaller, attendance was excellent, the discussion spirit developed rapidly, and at the close the group formed arrangements for continuing the following year. Few members of this group had had any contact with formal or informal parent education previously.

Tape recordings were made (with few exceptions) of all the lecture sessions and the group discussions. An attempt is being made to develop a content-analysis procedure for analyzing the change in quality of discussion which took place. This attempt will be reported elsewhere.

Significant features of the ^{has been} experiment. In comparison with other studies in parent education, this study ~~is~~ valuable in a number of respects. It has sacrificed extensive numbers for intensive coverage of small groups, hoping by close and continuing follow-up to insure 100% cooperation of the small sample rather than starting with large numbers and expecting that attrition would not reduce the numbers unduly. It seeks to contrast three current methods of parent education in a rigorously controlled manner and in a very difficult and emotionally loaded area. It is virtually unique in that it seeks to combine observational techniques with the more commonly used paper-pencil assessment techniques. Finally, it seeks to measure personality variables which could have some bearing on the learning outcomes. Personality is a complex area, and it may be rash to expect that tests now available can demonstrate clearly the interaction of personality variables with knowledge or behavioral outcomes. However, it is hoped that these data may supply a beginning.

SPECIFIC HYPOTHESES AND METHODS

Hypotheses to be tested. A number of specific hypotheses were formulated to guide the prosecution of the study. The following statements are illustrative:

Parents in all three treatment groups will state they have been helped, the discussion group exhibiting the most affirmations of benefit, the lecture group next, and the limited contact group fewest. The benefit claimed will differ for the two group procedures, being consonant with the orientation of the methods, the low contact group being least differentiated or explicit about specifying the kind of gain they have experienced, or type of benefit received.

The lecture-type program will result in more factual information gains than the "group-therapy" type program, which in turn will exhibit greater gains than the unsystematic, limited contact group.

The group-therapy type program will develop more favorable attitudes toward the child and more effective solutions of the family's problem than the lecture type program; the latter group, in turn, will outdistance the unsystematic, limited contact group.

Attitude change in parents will be most clearly apparent in paper-pencil scales, but significant changes will also occur in child handling techniques used by the parents.

Parents showing "normal" personalities on a personality inventory will profit from any educational procedure more than those with deviant profiles. Measured or observed parental attitude change will be related to patterns of parent personality; e.g., parents showing abnormal personality tendencies will change little if at all under any method, but parents exhibiting greater adaptiveness and flexibility will show some gains, regardless of method.

The parent's level of education is unrelated to his effectiveness in handling the problems associated with having a retarded child in the home.

Selection of variables and measures. In designing a social experiment one pays close attention to the selection of variables relevant to his hypotheses. Control variables usually include such factors as age, education, socio-economic status, intelligence, and the initial status of the group on such experimental factors as one wishes to interpose. Substantively, variables usually break down into knowledge, attitude, and performance dimensions. For purposes of this experiment the instruments listed in Table 2 were selected or developed as suitable appraisals for these several dimensions. This Table gives a brief presentation of each of these instruments and an overview of all the instruments used. The text which follows describes the instruments or modes of assessment developed for this particular study in some detail, giving much more brief mention to established instruments which were used without modification.

The Shipley-Hartford scale of adult intelligence offers verbal and reasoning subscores, and was used, along with parental education, to establish the comparability of the experimental groups. The Minnesota Multiphasic Personality Inventory is well known and was used to identify those parents with unusual personality trends. Each child, for descriptive purposes, was administered an

Table 2. Tests and Instruments Used in the Study

Area	Instrument	Score	Reference
Intelligence of Parents	Shipley-Hartford	3 scores: Vocabulary Reasoning Total	Shipley, Walter G., A self-administering scale for measuring intellectual impairment and deterioration. <i>J. Psychol.</i> , 1940, 9, 371-77
Personality of Parents	MMPI	14 subscales	Hathaway, S.R. & McKinley, J.C. Minnesota Multiphasic Personality Inventory Manual. The Psychological Corporation, 1951
Intelligence of Child	Individual intelligence tests. (Combination of Stanford-Binet's, Cattell's, Merrill-Palmer)	IQ	Cattell, W.C. Card versus booklet forms of the MMPI, <i>J. appl. Psychol.</i> , 1950, 34, 225-59
Knowledge of child development	Common Knowledge Information Test about Children	No. of correct items	Designed for this study
Knowledge of mental retardation	Mental Retardation Information Test	No. of correct items	Designed for this study
Attitudes toward child rearing	Parent Attitude Research Instrument (PARI)	Item score weighted according to 4 point scale of degree of agreement with item 7 sub-scales used: Scored for father and mother: 1. Fostering dependency 2. Breaking the will 3. Strickness 4. Comradship	Schaefer, E.S. & Bell, R.Q. Development of a parental attitude research instrument. <i>Child Development</i> , 1958, 29, 339-61, also Schaefer, E.S., & Bell, R.Q. <i>Parental attitude research instrument (PARI)</i> . Normative Data, Unpublished Manuscript, Library, National Institutes of Health, Bethesda, Md., 1955.

Table 2 (continued)

<u>Area</u>	<u>Instrument</u>	<u>Score</u>	<u>Reference</u>
Parents' description of child's behavior (rated also by Psychologists who observed child)	Cattell-Coan Behavior Traits Inventory (Institute of Child Welfare adaptation)	1. Discrepancy score. 2. Behavior description score. 5. Suppression of Aggression 6. Approval of Activity Scored for Mothers only. 7. Acceleration	Cattell, R. B. & Coan, R.W. Personality factors in middle childhood as revealed in parents' ratings. <u>Child Development</u>, 1957, 28, 439-58. Cattell, R. B. validation and intensification of the Sixteen Personality Factor Questionnaire, <u>J. clin. Psychol.</u>, 1956, 12, 205-14.
Description of mother-child interaction	Observations 1. Experimental situations a. Free play b. Test situation 2. Home observation	4 scores: (mothers only) 1. Effective control 2. Effective teaching 3. Non-attention 4. Nurturing	Moustakas, C. E., Siegel, I.E., & Schallock, H.D. An objective method for the measurement and analysis of child-adult interaction. <u>Child Development</u>, 1956, 27, 109-34.
Mother's evaluation of her child, her expectations, goals, perception of child's abilities and her report of management of child	Interview	5 area scores: (mothers only) 1. Severity of retardation 2. Expectations for school 3/ Impact on Family 4. Ultimate goals for the child 5. Behavior, management	

individual intelligence examination if a recent record established by a competent examiner was not available. Depending on the level of the child and other characteristics, the Stanford Binet, the Cattell, or the Merrill-Palmer was used.

The Common Knowledge About Children measure (Appendix B) was designed for earlier research at the Institute of Child Development. It is composed of purported factual affirmations about children and child behavior which the respondent evaluates as "true" or "false." The statements were designed for parents and consequently worded in the vernacular. Some fifty statements were prepared, many of them presenting an erroneous but commonly accepted belief or bit of folklore about child development. On the basis of pretesting with parent groups and application of a simple criterion of consistency, 30 items were retained for use in the present study. This test was given a sample of 70 college freshmen and estimated by Hoyt's method (1941) to have a reliability of $r_{tt} = +.49$.

The Mental Retardation Information Test (Appendix B) was prepared from an item pool of more than 100 items, distributed among the following areas: (1) social behavior and interaction, (2) personal development and parent influence, (3) emotional behavior, (4) discipline and guidance, (5) habit training, (6) occupations and interests, (7) general information (legal, medical and psychological), (8) intellectual behavior and development. Several professional workers experienced with family problems occasioned by mental retardation contributed to this item pool. These items were submitted to two University classes both before and after a course in mental deficiency. The items proved too easy for this group so they were administered to a group of parents, members of the Minneapolis Association for Retarded Children, but outside the present study. Using Lawsche's method (1942), it was possible to select 50 items which satisfied a 10% level of significance between high and low scoring samples. The reliability of this test was likewise established by Hoyt's method (1941) on a sample of fifty parents, $r_{tt} = +.76$; for a sample of fifty psychology undergraduates it was $+0.55$.

The Parents' Attitude Research Instrument or PARI, as it is known, by Schaefer and Bell (1955), was administered to gain some idea of parents' feelings about child-rearing practices. Both father and mother took the test before and after treatment, mothers answering the 23 sub-scale Mother's form, fathers the 28 sub-scale Father's form of the test. Each sub-scale has only five to eight items, yet studies have shown that the sub-scales, though necessarily of only modest reliability, do measure rather different aspects of parental child-rearing attitudes. It was decided to use seven of the sub-scales that might be significant for the experience of mentally retarded children, as follows:

- | | |
|--------------------------|-------------------------------|
| 1. Fostering dependency. | 5. Suppression of aggression. |
| 2. Breaking the will. | 6. Approval of activity. |
| 3. Strictness. | 7. Acceleration. |
| 4. Comradeship. | |

The first six categories were also scored for the father, but the seventh category, acceleration, was not included on the father's form. These sub-scales were chosen because of their relatedness to the general area being studied, their pertinence to the type of child being dealt with, and also because they could be related to the behaviors being rated in the observational situations. As others have discovered, we found that parents objected to this instrument, sometimes strenuously. They disliked its length, repetitiousness, ambiguity in the items, the fact that it could apply to several age levels, and its essentially "negative" character.

Among the several Behavior Rating scales for young normal children, that by Cattell and Coan (1957) appeared to include the largest number of qualities which could be observed in retarded children. This scale, called in this study the Behavior Traits Inventory, had to be modified somewhat to meet the special situation presented by mentally retarded children; a number of items were discarded, and others were added. The form as used in this study contains 44 items and appears in Appendix B. Two scores were derived; one score, a discrepancy score, related the father's and mother's ratings of their child to the estimate of the child's behavior made by combining the ratings of two observers who were quite familiar with the child's behavior in nursery school. Because each item in the scale is checked on a three point basis, the discrepancy score per item could vary from 0.0 to 2.0 steps, disregarding direction of the difference. These scores, summed across all items and divided by the number of items, are, thus, mean discrepancy scores. The larger of two scores represents a greater disparity between judges and parent in their estimates of the child's behavior. The assumption made in the score is that the rating of a parent is colored by hopes, biases, and misperceptions. The score, thus, is intended to record the degree of reality of the parent's assessment of his child, across a number of items.

Discrepancy scores have a serious theoretical limitation. If behavior is highly situational as it sometimes appears to be, the discrepancy does not necessarily measure the parent's misperception. Furthermore, the assumption that the psychologically trained observer gives an accurate estimate may be erroneous. Consequently, another score was derived, a simple behavioral description score. Because each three point item is monotonic, (varies along a continuum, one end of which can be said to have social or adjustmental "value") one extreme is more acceptable or desirable than the other. On this assumption, five judges assigned weights to the items. On the basis of agreement of four out of five judges, it was possible to assign a scoring weight of 0, 1, or 2 to each response of every item, such that a higher total score is indicative of greater acceptability or "normality" of behavior. This score, too, theoretically can reflect the parental perception of the child's behavior. If trained observers over an interval of time note no appreciable change in behavior, while parents record significant improvement, possibly parents are recording a change in their own perception of the child's behavior, reflecting their changed attitudes and feelings. However, in this instance also, the situational character of behavior must be recognized. It is possible that on a descriptive rating scale parents are indeed accurate observers and reporters. While this study could not attempt to solve this theoretical issue and methodological problem, both scores were used for experimental purposes.

An Interview was held with each mother prior to the beginning of the study and again at the conclusion. The parent interview was designed to supply a measure of the subject's perspective on his problems as the parent of a mentally retarded child. A schedule of lead questions was prepared and pre-tested around four issues: (1) The family's expectations concerning results from the child's school experience, (2) the child's impact on the family unit, (3) the parent's ultimate goal for the child, and (4) behavior and management of the child. A fifth area, severity of retardation, was rated on the basis of the content of the total interview. A copy of the interview guide appears as Appendix B to this report, together with a more complete description of the content of the areas. The mothers' responses to the interview were noted down, transcribed, and evaluated independently by two judges who were acquainted with the child.

The specific procedure was as follows: raters discussed the definition of the five areas several times to establish a common basis of understanding. Then the interviews were evaluated on the basis of whether or not the parents' expressed attitudes constituted a realistic appraisal of the child's retardation, capacities, and potential performance. To make his final rating, each judge abstracted from the typed interview record the statements made by the parents that were pertinent to each specific area, writing these down on a separate page for each area. These statements were then marked plus or minus, according to whether each was judged as realistic or not in terms of the criterion - the professional worker's estimate of the child. A "realism score", expressed as a ratio of the positive items to the total number of positive and negative items, constituted the final rating.

Inter-rater agreement was established on ten interviews with mothers whose children had at one time been in the nursery school but no longer attended it. These reliabilities (rank order correlations) were as follows:

Severity of Retardation	.92
Expectations for School	.79
Impact on Family	.55
Ultimate Goals for Child	.81
Behavior and Management	.11

These reliabilities were considered encouraging and further conferences on the definitions were held. Agreement between raters was then computed (for the first thirty Minneapolis interviews for each of the five areas) as follows (Pearson product moment r 's):

Severity of Retardation	.62
Expectations for School	.68
Impact on Family	.41
Ultimate Goals for the Child	.43
Behavior and Management	.79

The total population of interviews in both experiment A and B were rated by both judges, and their estimates combined. Two interviewers, who also served as judges conducted the initial interviews. A social worker new to the project conducted the final interviews, though the first two judges abstracted and judged the elements from his reports.

For Observations of Parent-Child Interactions, each mother brought her child to the University of Minnesota's Institute of Child Development laboratory for observation. The procedure for observing mother and child was as follows: first, each mother-child pair was observed in a 25 minute free-play situation. A play room with one-way observation mirror was used with standard play equipment, which included plastic bathtub filled with water, one small water toy (plastic turtle), five quarter-pound sticks of clay in red, blue, and yellow, one mail bag of Play-Skool blocks of various shapes, one large and two small dolls, one large ball, and a box of kindergarten crayons with a supply of newsprint.

Each mother was ushered into the room and told that her child could play with any of the materials. She was informed that she and the child would be observed for 25 minutes in order to get an impression of the child's play performance. Mother was asked to play with her child as much like she would at home as possible. This explanation was generally accepted at face value and seemed to result in less self-consciousness. The observers believed,

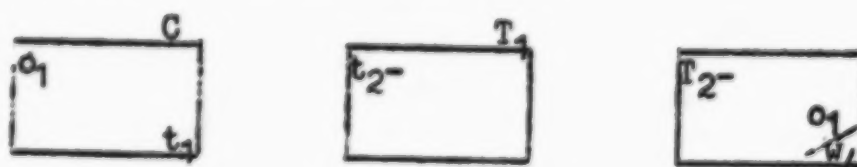
however, that the mothers in many cases attempted to demonstrate their child's skills and abilities. This effort was noticed especially in the mothers of the control group, who were eager to get their children into the Day Care Center.

In a second session, the mother was requested to teach her child some simple test items and a standard set of instructions was prepared for this purpose (see Appendix B). The tests chosen were: (1) A six-cube pyramid (Merrill-Palmer), (2) a three-cube pyramid (Merrill-Palmer), (3) the little pink tower (Merrill-Palmer), (4) drawing a circle, cross, and star. Items were selected on which the child had probably not had much previous experience. Furthermore, for these items the norms of pass and failure at early mental ages are well known. The three-cube pyramid, drawing the circle, and the pink tower are reasonably easy, even for mentally retarded children. The six-cube pyramid and the cross are quite difficult items, and in these experiments no child passed the cross. Thus each child had both success and failure experiences. Although the test situation was originally selected simply to give the observers an opportunity to see how a parent went about teaching his child, it quickly became apparent that the situation was a stressful one for many mothers. They felt their children were being put "on the spot". The stress factor was intensified possibly because the parents were requested to score the child's performance as pass or fail on the various items. The situation thus became useful as a basis for estimating certain affective relations between mother and child.

A third observational situation was arranged in the child's home by the same two observers. All youngsters were observed at their bed-time. These observations were considerably less useful than those conducted in the laboratory setting because of the great range in the time intervals involved, which varied from as little as a few minutes to as long as an hour. Despite the request of the observers, some parents insisted on having the child all bathed and dressed and ready for bed before the observer came to the home. Some parents used tranquilizers as a recommended treatment at bedtime, which modified considerably the child's behavior in these cases.

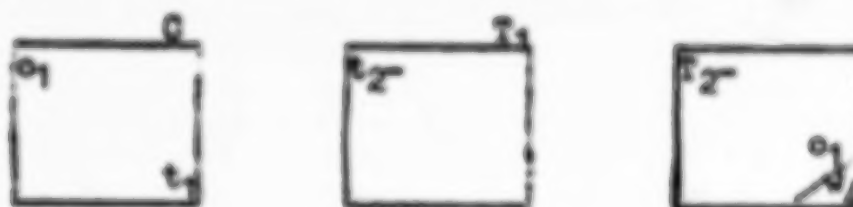
After some experimentation the Moustakas, Sigel, and Schalock (1956) method (developed by Schalock) of coding the behavior in parent-child interactions was adopted with slight adjustment. This method is a modification of time-sampling, based on five-second intervals. The behavior of both adult and child occurring in each five-second interval is described and classified according to a fairly complex coding system. The range of behavior exhibited by severely retarded children is, however, limited, and the system proved feasible. The greatest problem was the training of observers. Mastering the use of the coding system required a period of about three weeks and approximately sixty hours actual working time. Moustakas, et.al, (1956) report an over all agreement of 93 per cent between raters. For the first ten practice protocols in the present study an over all agreement in the 25 minute experimental situation reached 81 per cent.

For purposes of this study, these complexly coded protocols were further simplified and a scoring system, based on interaction units was devised. An interaction unit consists of two bits of behavior, the mother's and the child's, related in time and in the logic of effect. For example, take the following episode coded according to Schalock's system:



These symbols indicate that during three consecutive five second intervals, the child is playing with blocks, mother watching him; child says, "This block goes here, doesn't it?" (imparts information to mother and asks question), mother replies, "Yes, it goes there; what color is that block?" (mother answers and questions), child continues in play and ignores the question.

This sequence of behavior breaks into three clear-cut interaction units, as follows:



- (1) Child plays; mother watches his play.
- (2) Child comments, then questions; mother replies.
- (3) Mother questions; but child ignores.

Such interaction units can be classified in various ways, and various types can be identified. Some types occur very infrequently, particularly with mentally retarded children. Four classes of interactions were selected. For this study, it seemed especially desirable to study the mother's effectiveness in handling her child. For example, it was quite possible to determine, from the mother's and child's behavior, whether or not parental attempts at control of the child's behavior were effective, whether or not teaching methods worked. Similarly, it was possible to determine the extent of the mother's attention or non-attention to the child and the mother's nurturance or encouragement given the child. A score for each of these types of behavior was derived as follows:

Category I. Control: This category is made up of all the directing, forbidding, and restricting behavior appearing in protocol. A count of the number of incidents of all these behaviors was available. The interactional units were divided into effective and ineffective control behavior. Control behavior was considered effective if the command or restriction was followed by compliance on the part of the child. The basic question was, "Can the parent get the youngster to do what he wishes?" Control was classed as ineffective control when parents issued a request, command or restriction to which the child did not respond, e.g., he continued playing, he actively refused, he had a temper tantrum, or simply said "No". The score is a ratio of effective control to total attempts at control by the parent.

Category II. Teaching: This category consists of all behavior of the mother that attempts to teach. Such behavior was coded in terms of verbal instruction or demonstration, or a combination of the two. The interaction units in this class were then classified according to effectiveness. Because of the nature of the subjects it was decided that the child's response did not have to be a successful completion of the task; teaching was considered effective when the child watched the parent or responded in some way to the parent's teaching attempt. The score is the ratio of effective teaching behavior to total teaching attempts.

Category III. Non-attention: The Non-attention category consists of those episodes in which neither parent nor child attempts to stimulate or work with the other. An example would be a child playing quietly by himself

while his mother sat and looked out the window, or read a magazine, or was occupied with her own thoughts in some way. This is rated in terms of the ratio of the total amount of nonattentive behavior to total number of interactional units tabulated in a twenty-five minute free-play observation.

Category IV. Nurturing Behavior: This category combines the praise, helping, loving, and reassuring categories in the Schalock system. Each specific behavior appeared so infrequently in the protocols that it would not have been possible to score them individually. An exploratory tabulation of some of the early protocols yielded a sufficiently wide range of the display of these kinds of behavior to show that it was probably important to investigate a combination of them.

The test situation and the home observation were scored similarly. It was found that the non-attention category appeared so infrequently in the home situation that it could not be tabulated. Therefore, the test situation was scored only for control behavior, teaching behavior, and nurturing behavior.

These scores proved to be statistically independent of one another. Below appear intercorrelations established by the pretest scores of all the cases in Experiment A, Free Play situation. None of the values reach statistical significance:

	2.	3.	4.
1. Effective control	+0.16	+0.02	+0.23
2. Effective teaching		-0.28	.00
3. Non-attention			-0.20
4. Nurturing			

RESULTS

In anticipation of sample shrinkage, the project tried to enlist a larger number of cooperating persons than required by the design. Unfortunately, the available supply of families did not permit this. Although all groups started with the appropriate number of cases, for reasons already discussed the samples shrank somewhat. In the tables which follow, all available data have been included in the calculation of statistical constants. When analyses of variance and covariance are used, the number of cases shrinks somewhat further, as we included only those cases on whom we had complete data for a particular block of measures.

Comparability of groups on control variables. Table 3 following shows that there are differences in the socio-economic composition of the several groups, despite the random assignment of cases to treatment methods. In Experiment A, the discussion group appears to come from lower levels than the control group. Table 4, listing parental education, suggests a somewhat superior status for the control group in Experiment A; other groups are not strikingly dissimilar among themselves.

The intelligence measures provided by the Shiply-Hartford Vocabulary (Tables 5.1, 5.2) and Reasoning scores (Tables 5.3, 5.4) suggests differences between men and women as well as among the treatment groups, but simple analysis of variance, first by sex and then by group, indicated that these observed differences fall short of statistical significance. Moreover, a correlational analysis showed that neither Shiply score related significantly to gains on any outcome variable. Hence it was concluded that the factor of intelligence differences among the treatment groups could be ignored during the further statistical work with the data.

Tables 6.1 to 6.26 inclusive, following, describe initial status on the additional control or antecedent variables - the scales of the Minnesota Multiphasic Inventory. These values are expressed as standard scores and suggest, as far as this personality measure goes, a reasonably normal composition of the groups, with several possible exceptions. The lecture and discussion groups in Experiment A, and the "low contact" group in Experiment B show several means which depart from the general average, a full standard deviation or more.

In Experiment A, the men in the lecture and discussion groups are high on the K and Hy scales, and the men in the discussion group are high also on Pd and Mf scales. Men in the low contact group are high on Pd but not markedly deviant on other scales. In Experiment B, the men in the low contact group are high on D, Hy, Pd, Pt and Sc. In terms of group averages it is of no value to attempt psychological diagnosis of groups, based on averages of individual scales, but it is reasonable to say that the Discussion group in Experiment A and the Low Contact group in Experiment B contained an unusual number of individuals with "different" personalities.

For the women in Experiment A, the Discussion group runs high on D, and especially on Pd, and Pa. These latter two scales show the mean of this group as a two-standard-deviation departure from the general average. Thus, in Experiment A, a rather unusual concentration of "different" persons, both men and women, occurred in the Discussion group, which may in part be related to the experience reported by the discussion leader in that group.

In Experiment B, the women of the low contact group run high on Hy, Pd, and Sc; in view of the ratings of some of the husbands in this group,

we note again that the difficulty in retaining members in this group may be not unrelated to the personalities which chanced to fall into this group.

Table 3. Distribution of Cases by Socio-Economic Status (Occupation of Fathers) in the Treatment Groups

Class on Minn.- esota Occupa- tional Scale	Experiment A				Experiment B		
	Dis- cussion	Lec- ture	Low con- tact	Con- trol	Dis- cussion	Lec- ture	Low con tact
I. Professional			1	2	3		
II. Managerial		3	2	2	1		1
III. Skilled	3	3	3	4		5	1
IV. Farmers							
V. Semi-skilled	5	2	3	8	1	2	1
VI. Slightly skilled	2				2		2
VII. Unskilled		1					
	10	9	9	16	7	7	5

Table 4 Education of Parents in the Groups

Amount of schooling	Experiment A								Experiment B							
	<u>Discussion</u> Fa	<u>Mo</u>	<u>Lecture</u> Fa	<u>Mo</u>	<u>Low Contact</u> Fa	<u>Mo</u>	<u>Control</u> Fa	<u>Mo</u>	<u>Discussion</u> Fa	<u>Mo</u>	<u>Lecture</u> Fa	<u>Mo</u>	<u>Low Contact</u> Fa	<u>Mo</u>		
Eighth grade or less	1	1	1				5	1	1	1	2	1	1			
Some High school	7	9	5	8	6	6	8	14		2	3	4	2	5		
High school graduation or beyond	1 <u>9</u>	<u>10</u>	3 <u>9</u>	1 <u>9</u>	3 <u>9</u>	3 <u>9</u>	2 <u>15</u>	1 <u>16</u>	4 <u>5</u>	2 <u>5</u>	1 <u>6</u>	1 <u>6</u>	2 <u>6</u>	1 <u>6</u>		

Table 5.1. Means and Standard Deviations of Mothers' Scores
on the Shipley Intelligence Scale: Vocabulary

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	27.90	3.90	14	29.86	10.16
Lecture	10	32.30	5.25	7	27.71	6.68
Low contact	9	29.00	4.21	14	25.43	9.48
Control	16	25.81	5.44			

Table 5.2. Means and Standard Deviations of Fathers' Scores on the
Shipley Intelligence Scale: Vocabulary

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	32.00	3.56	12	32.17	6.25
Lecture	9	28.56	5.29	6	29.83	3.06
Low contact	8	32.13	6.90	6	29.33	6.77
Control	13	27.69	8.41			

Table 5.3. Means and Standard Deviations of Mothers' Scores on the Shipley Intelligence Scale: Reasoning

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	22.10	11.10	14	26.57	8.99
Lecture	10	27.60	11.95	7	21.14	7.82
Low contact	9	29.33	6.16	14	20.86	9.53
Control	16	18.25	9.43			

Table 5.4 Means and Standard Deviations of Fathers' Scores on the Shipley Intelligence Scale: Reasoning

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	25.14	9.15	12	26.67	11.61
Lecture	9	29.78	7.02	6	17.33	3.83
Low contact	8	28.00	10.69	6	26.67	10.48
Control	13	22.00	11.46			

**Table 6.1. Means and Standard Deviations of Mothers' Scores on
the Minnesota Multiphasic Personality Inventory: L Scale**

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	52.70	6.53	14	52.000	9.75
Lecture	10	49.80	8.12	7	54.43	3.21
Low contact	9	54.70	11.49	14	49.71	7.31
Control	15	49.53	6.48			

**Table 6.2. Means and Standard Deviations of Fathers' Scores on the
MMPI: L Scale**

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	48.43	6.43	12	46.33	4.46
Lecture	9	48.89	5.82	7	49.71	6.97
Low contact	8	50.13	4.12	8	57.00	9.62
Control	10	45.40	6.28			

Table 6.3. Means and Standard Deviations of Mothers' Scores on the
MMPI: F Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	9	55.22	21.39	14	48.86	1.51
Lecture	10	50.60	5.93	7	51.71	4.72
Low contact	9	49.00	5.48	14	55.86	11.43
Control	15	52.47	7.57			

Table 6.4. Means and Standard Deviations of Fathers' Scores on the MMPI:
F Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	53.00	5.10	12	50.50	4.74
Lecture	9	49.11	3.89	7	50.29	4.54
Low contact	8	50.13	2.36	8	56.50	9.37
Control	10	49.90	6.12			

Table 6.5. Means and Standard Deviations of Mothers' Scores on the MMPI: K Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	53.00	7.80	14	58.71	10.21
Lecture	10	55.40	8.04	7	56.00	8.08
Low contact	9	58.00	11.49	14	53.14	13.85
Control	15	53.13	10.40			

Table 6.6. Means and Standard Deviations of Fathers' Scores on the MMPI: K Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	59.43	7.23	12	61.17	10.17
Lecture	9	61.44	8.29	7	51.86	9.75
Low contact	8	55.00	9.43	8	54.25	13.55
Control	10	56.00	7.16			

**Table 6.7 Means and Standard Deviations of Mothers' Scores
on the MMPI: Hs Scale**

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	52.70	11.43	14	49.57	6.51
Lecture	10	50.10	7.16	7	52.86	13.51
Low contact	9	52.70	9.17	14	58.57	9.46
Control	15	56.27	11.87			

**Table 6.8. Means and Standard Deviations of Scores for Fathers
on the MMPI: Hs Scale**

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	53.14	8.03	12	51.67	8.88
Lecture	9	53.22	8.95	7	49.00	9.11
Low contact	8	52.38	8.91	8	67.25	10.73
Control	10	48.30	9.64			

Table 6.9. Means and Standard Deviations of Mothers' Scores
on the MMPI: D Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	61.70	8.74	14	54.14	6.55
Lecture	10	57.50	6.85	7	57.14	12.76
Low contact	9	55.80	13.48	14	58.71	7.14
Control	15	57.67	8.97			

Table 6.10. Means and Standard Deviations of Fathers' Scores
on the MMPI: D Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	54.14	6.96	12	54.33	9.06
Lecture	9	48.22	6.48	7	56.43	9.78
Low contact	8	54.88	12.04	8	58.75	12.63
Control	10	52.70	11.91			

6.11 . Means and Standard Deviations of Mothers' Scores on the MMPI:
Hy Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	54.60	13.74	14	50.14	9.19
Lecture	10	54.10	5.51	7	54.00	10.15
Low contact	9	59.30	9.77	14	59.86	7.91
Control	15	58.53	9.66			

Table 6.12. Means and Standard Deviations of Fathers' Scores on the
MMPI: Hy Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	60.29	9.84	12	55.67	6.05
Lecture	9	59.44	6.11	7	49.86	10.90
Low contact	8	56.00	5.42	8	61.75	9.30
Control	10	54.20	5.92			

Table 6.13. Means and Standard Deviations of Mothers' Scores
on the MMPI: Pd Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	69.60	13.80	14	57.86	9.26
Lecture	10	49.70	4.30	7	50.00	13.38
Low contact	9	56.60	9.18	14	61.57	18.87
Control	15	57.00	10.15			

Table 6.14. Means and Standard Deviations of Fathers' Scores on
the MMPI: Pd Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	62.14	10.12	12	58.33	8.94
Lecture	9	52.33	9.85	7	50.43	9.57
Low contact	8	59.38	10.89	8	60.75	12.39
Control	10	53.30	13.33			

Table 6.15. Means and Standard Deviations of Mothers' Scores on the MMPI: Mf Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	51.80	10.31	14	42.57	15.45
Lecture	10	42.70	9.26	7	49.29	5.71
Low contact	9	47.30	9.46	14	56.14	9.22
Control	15	48.93	7.64			

Table 6.16. Means and Standard Deviations of Fathers' Scores on the MMPI: Mf Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	60.00	4.20	12	50.50	12.21
Lecture	9	51.22	5.87	7	53.57	6.29
Low contact	8	55.50	7.76	8	55.25	4.30
Control	10	57.10	10.38			

Table 6.17. Means and Standard Deviations of Mothers' Scores on the
MMPI: Pa Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	62.70	8.41	14	56.79	5.99
Lecture	10	55.00	7.30	7	58.57	6.21
Low contact	9	53.10	14.56	14	52.71	6.76
Control	15	53.73	8.97			

Table 6.18. Means and Standard Deviations of Fathers' Scores on
the MMPI: Pa Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	55.14	4.49	12	51.17	7.78
Lecture	9	53.33	7.26	7	49.29	7.04
Low contact	8	53.63	12.88	8	56.75	7.30
Control	10	51.20	7.38			

Table 6.19 . Means and Standard Deviations of Mothers' Scores on the
MMPI: Pt Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	58.70	10.01	14	54.57	5.35
Lecture	10	54.30	3.74	7	55.43	9.86
Low contact	9	54.10	12.90	14	56.57	13.53
Control	15	55.73	9.38			

Table 6.20. Means and Standard Deviations of Fathers' Scores on the
MMPI: Pt Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	51.14	6.41	12	53.17	11.88
Lecture	9	52.44	7.33	7	51.43	4.99
Low contact	8	50.75	11.11	8	60.25	14.31
Control	10	51.00	9.26			

Table 6.21. Means and Standard Deviations of Mothers' Scores on the
MMPI: Sc Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	57.20	11.34	14	50.71	4.50
Lecture	10	51.00	4.52	7	52.29	8.01
Low contact	9	51.10	10.17	14	61.00	18.17
Control	15	55.33	11.80			

Table 6.22. Means and Standard Deviations of Fathers' Scores on the
MMPI: Sc Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	53.00	5.97	12	53.83	7.15
Lecture	9	46.78	7.05	7	47.71	8.01
Low contact	8	48.38	11.60	8	65.25	13.15
Control	10	49.60	8.24			

6.23. Means and Standard Deviations of Mothers' Scores on the
MMPI: Ma Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	56.90	12.57	14	47.86	9.05
Lecture	10	46.30	6.60	7	45.57	13.42
Low contact	9	49.80	6.55	14	51.29	12.56
Control	15	48.40	7.74			

Table 6.24. Means and Standard Deviations of Fathers' Scores on the
MMPI: Ma Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	49.86	9.72	12	49.83	8.91
Lecture	9	54.33	6.82	7	49.57	10.56
Low contact	8	51.50	6.79	8	57.25	5.26
Control	10	49.20	6.86			

Table 6.25. Means and Standard Deviations of Mothers' Scores on the MMPI: S1 Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	10	55.00	7.27	14	56.00	7.81
Lecture	10	58.50	6.79	7	55.57	8.90
Low contact	9	50.60	13.06	14	57.29	14.37
Control	15	57.07	8.24			

Table 6.26. Means and Standard Deviations of Fathers' Scores on the MMPI: S1 Scale

<u>Group</u>	<u>Experiment A</u>			<u>Experiment B</u>		
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
Discussion	7	48.86	6.12	12	48.33	11.95
Lecture	9	45.44	9.48	7	54.29	6.65
Low contact	8	49.75	9.18	8	54.75	15.68
Control	10	49.70	9.41			

Results: Experimental Variables. Tables 7.1 through 9.13 describe initial and final status for mothers and for fathers, separately by experiment, on the experimental or outcome variables which were given both sexes. Some of these differences are of fair size; simple analyses of variance, by sex and by group, showed that a number of the sex differences, especially on the PARI (Parent Attitudes Research Instrument) reach statistical significance, whereas the differences among the groups can generally be ignored. Tables 10.1 and 10.2 give results of these analyses of variance.

Consequently, in analyzing gain scores, two-way analyses of variance were calculated on these variables, namely, the two tests of information, and the six scales of the PARI. Only two instances of significant ($P = .05$) interaction, sex by group occurred, both in Experiment A. These instances involved the Mental Retardation Information Test and the Comradeship scale of the PARI inventory. Inspection of the mean values in Tables 8.1, 8.2 and 9.7, 9.8 fails to offer any basis for psychological significance for this interaction. All gains, both on knowledge and information items and on attitude items proved to be negligible and non-significant, both in amount and among groups.

Tables 11.1 through 11.4 describe initial and final status on the Behavior Rating measure. This schedule was not used with the control families because it was not possible to observe their children in a group setting, a factor in the original plan for using this instrument. Such observation, it will be recalled, was necessary to obtaining the discrepancy score, a measure of the difference between observer and parent in rating the child's behavior, purportedly a measure of the reality or accuracy of the parents' view of the child. While there are some slight changes between the means, pre- and post-, of the several groups, there is no evidence for significant differential change in any of the treatment groups on this measure. Again we fail to refute the null hypothesis.

The remaining outcome variables were used with mothers only. Initial and final status of groups in both experiments are described in Tables 12.1 to 15.3. Analysis of variance applied to the initial status on the Interview and the Experimental Situation measures (see Table 16.0) revealed no significant differences among the treatment groups in Experiment B. In Experiment A, several initially significant differences were noted. In the Interview, on awareness of Severity of Retardation, the Control group fell below the treatment groups by a significant amount. However, analysis of the gains, pre-test to post-test, failed to show differences in amount of gain among the groups. In Experiment B, the Discussion and Low Contact groups gained on the average but the changes were statistically insignificant. On none of the other scales in either experiment did the groups differ initially by significant amounts, nor did they differ in amount of gain shown. These gains, though usually in a positive direction, were statistically insignificant.

Nor did the experimental Play, Test, and Home situations fare any better. Initially, in Experiment B there were no significant differences among groups. In Experiment A, significant differences appeared at the outset. In Effective control the groups differed significantly in initial score, the mothers of the Lecture group being low and mothers of the Low contact group high. At the post-test, these initial differences were erased, the groups differing not at all among themselves in terminal status. Likewise, in amount of non-attention shown children the groups differed significantly, the Control mothers being high and the Low contact mothers, low in amount of non-attention shown. (F

Table 7.1 Means and Standard Deviations of Mothers' Scores on The Common Knowledge About Children Test

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	18.30	2.45	9	18.33	1.87	6	19.50	3.15	7	20.14	3.22
Lecture	10	19.50	6.71	9	20.00	2.50	8	17.12	3.76	6	18.17	1.94
Low Contact	9	19.40	3.13	9	19.89	2.47	6	16.50	3.21	7	16.29	3.77
Control	16	17.44	2.94	15	17.07	2.31						

Table 7.2 Means and Standard Deviations of Scores for Fathers on The Common Knowledge About Children Test

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	7	20.29	2.43	7	19.71	1.89	5	21.40	1.52	6	20.50	2.35
Lecture	9	18.89	2.09	8	19.75	1.67	5	18.80	2.86	5	17.40	3.36
Low Contact	8	19.38	3.89	7	20.43	2.76	2	17.50	3.54	3	19.33	5.13
Control	13	18.54	2.50	11	19.36	4.76						

Table 8.1 Means and Standard Deviations of Mothers' Scores on The Mental Retardation Information Test

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	31.70	5.70	9	33.78	4.18	6	29.50	5.09	7	31.86	5.98
Lecture	10	32.40	2.46	9	34.22	1.99	8	29.00	6.26	6	30.83	2.14
Low Contact	9	31.30	4.85	9	32.11	3.89	6	29.67	5.75	7	29.29	5.82
Control	16	30.06	4.71	15	30.13	4.34						

Table 8.2 Means and Standard Deviations of Scores for Fathers on The Mental Retardation Information Test

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	7	31.43	3.10	7	32.00	3.46	5	29.20	2.68	6	28.83	6.05
Lecture	9	31.56	3.57	8	34.38	2.83	5	30.80	3.35	5	29.40	4.04
Low Contact	8	29.63	4.69	7	30.43	3.99	2	32.50	10.06	3	31.67	8.14
Control	13	28.54	6.90	11	27.36	7.28						

Table 9.1 Means and Standard Deviations of Mothers' Scores on the PARI
(Parent Attitudes Research Instrument): Fostering Dependency Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	10.70	3.33	8	10.00	3.13	7	12.29	3.59	7	10.86	3.18
Lecture	9	10.67	2.78	9	10.33	2.83	8	11.12	2.17	8	11.00	1.93
Low Contact	9	10.00	4.15	8	9.50	3.30	5	10.00	2.92	7	10.86	1.95
Control	6	13.56	3.71	13	13.46	3.73						

Table 9.2 Means and Standard Deviations of Fathers' Scores on the PARI: Fostering Dependency Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	6	18.00	4.82	4	20.50	2.52	6	19.33	3.33	6	19.67	3.01
Lecture	9	17.33	3.08	8	17.50	2.39	7	18.71	4.72	6	20.83	2.32
Low Contact	8	17.25	3.54	7	18.29	4.03	2	17.50	0.71	3	18.00	1.73
Control	13	19.54	4.89	12	19.75	5.10						

Table 9.3 Means and Standard Deviations of Mothers' Scores on the PARI: Breaking the Will Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	11.70	3.27	8	12.50	3.16	7	10.43	3.41	7	9.14	3.48
Lecture	9	10.89	2.62	9	10.44	3.09	8	11.88	2.80	8	11.75	3.54
Low Contact	9	9.89	3.62	8	9.50	3.34	5	12.20	3.49	7	13.86	1.77
Control	16	11.81	3.60	13	12.38	3.20						

Table 9.4 Means and Standard Deviations of Fathers' Scores on the PARI: Breaking the Will Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	6	19.50	2.95	4	19.00	4.69	6	16.17	3.76	6	17.00	1.67
Lecture	9	16.44	2.70	8	16.75	3.16	7	19.71	5.35	6	19.00	4.60
Low Contact	8	17.50	4.00	7	19.00	2.38	2	14.50	2.12	3	19.67	6.66
Control	13	19.77	3.90	12	19.25	4.41						

Table 9.5 Means and Standard Deviations of Mothers' Scores on the PARI: Strictness Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	15.10	3.00	8	15.75	1.98	7	13.86	2.48	7	13.43	2.57
Lecture	9	14.22	1.48	9	14.78	1.92	8	14.50	2.57	8	14.62	2.56
Low Contact	9	13.33	2.35	8	13.75	2.38	5	14.40	2.30	7	16.29	2.21
Control	16	15.56	2.13	13	16.85	1.91						

Table 9.6 Means and Standard Deviations of Fathers' Scores on the PARI: Strictness Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	6	23.00	4.69	4	25.00	1.83	6	21.00	3.95	6	22.67	1.86
Lecture	9	22.78	3.77	8	22.50	4.24	7	22.00	5.10	6	22.67	6.35
Low Contact	8	22.50	2.07	7	22.86	2.34	2	24.00	7.07	3	24.33	4.04
Control	13	22.92	2.33	12	24.17	2.95						

Table 9.7 Means and Standard Deviations of Mothers' Scores on the PARI: Comradeship Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	17.40	2.76	8	18.25	2.05	7	17.71	2.63	7	17.86	2.79
Lecture	9	18.78	1.09	9	17.22	1.64	8	18.38	1.41	8	17.62	2.13
Low Contact	9	18.70	1.58	8	19.50	0.76	5	17.20	2.59	7	20.00	5.74
Control	16	18.56	1.75	13	18.69	1.25						

Table 9.8 Means and Standard Deviations of Fathers' Scores on the PARI: Comradeship Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	6	29.17	2.04	4	29.75	2.50	6	27.00	3.16	6	26.83	2.86
Lecture	9	26.44	2.30	8	27.62	2.56	7	28.29	2.06	6	27.50	3.51
Low Contact	8	27.63	2.33	7	25.86	2.41	2	29.00	2.83	3	32.67	4.52
Control	13	28.00	3.29	12	28.25	2.45						

Table 9.9 Means and Standard Deviations of Mothers' Scores on the PARI: Suppression of Aggression Scale

Group	Experiment A				Experiment B			
	Initial		Final		Initial		Final	
	N	Mean	N	Mean	N	Mean	N	Mean
Discussion	10	9.40	8	9.62	7	10.00	7	9.86
Lecture	9	10.67	9	10.33	8	11.25	8	11.25
Low Contact	9	9.33	8	8.62	5	9.40	7	12.14
Control	16	11.31	13	10.46				

Table 9.10 Means and Standard Deviations of Fathers' Scores on the PARI: Suppression of Aggression Scale

Group	Experiment A				Experiment B			
	Initial		Final		Initial		Final	
	N	Mean	N	Mean	N	Mean	N	Mean
Discussion	6	15.67	4	14.00	6	15.00	6	15.33
Lecture	9	16.00	8	15.50	7	16.43	6	16.50
Low Contact	8	18.88	7	19.14	2	16.00	3	25.50
Control	13	16.38	12	16.42				

Table 9.11 Means and Standard Deviations of Mothers' Scores on the PARI:
Approval of Activity Scale

Group	Experiment A				Experiment B			
	Initial		Final		Initial		Final	
	N	Mean	N	Mean	N	Mean	N	Mean
Discussion	10	12.40	8	12.88	7	11.43	7	11.71
Lecture	9	12.56	8	12.12	8	12.50	8	11.62
Low Contact	9	12.33	8	12.50	5	13.80	7	15.43
Portrol	16	14.38	13	14.38				

Table 9.12 Means and Standard Deviations of Fathers' Scores on the PARI:
Approval of Activity Scale

Group	Experiment A				Experiment B			
	Initial		Final		Initial		Final	
	N	Mean	N	Mean	N	Mean	N	Mean
Discussion	6	24.00	4	24.00	6	20.33	6	18.67
Lecture	9	19.00	8	21.38	7	22.14	6	22.67
Low Contact	8	21.10	7	22.14	2	22.50	3	25.33
Control	13	21.54	12	22.17				

Table 9.13 Means and Standard Deviations of Mothers' Scores on the
Parent Attitudes Research Instrument: Acceleration Scale

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	16	10.60	3.72	8	12.62	2.67	7	10.00	4.90	7	9.86	5.11
Lecture	9	11.22	3.77	9	11.00	1.87	8	11.75	1.67	8	10.62	2.54
Low Contact	9	11.90	4.40	8	11.50	4.07	5	11.40	4.10	7	11.86	2.84
Control	16	13.50	11.47	13	12.08	3.59						

Table 10.1 Results of Analyses of Variance, by Sex, for Initial Status on Experimental Variables

Variable	Experiment A		Experiment B	
	F.	Signif.	F.	Signif.
<u>Knowledge and Information</u>				
Common Knowledge Test	1.53	n.s.	3.92	.10
Mental Retardation Information Test	10.05	.01	.37	n.s.
<u>Attitudes</u>				
Parent Attitudes Research Instrument				
Fostering Dependency	63.31	.01	53.71	.01
Breaking the Will	71.41	.01	21.63	.01
Strictness	154.36	.01	40.87	.01
Comradeship	323.49	.01	159.18	.01
Suppression of Aggression	81.52	.01	26.34	.01
Approval of Activity	195.79	.01	45.21	.01
Cattell Behavior Rating	0.18	n.s.	0.82	n.s.

Table 10.2. Results of Analyses of Variance, by Group, for Initial on Experimental Variables

Variable	Experiment A		Experiment B	
	F.	Signif.	F.	Signif.
<u>Knowledge and Information</u>				
Common Knowledge Test	1.39	n.s.	2.43	n.s.
Mental Retardation Information Test	1.83	n.s.	.12	n.s.
<u>Attitudes</u>				
Parent Attitudes Research Instrument				
Fostering Dependency	1.54	n.s.	.88	n.s.
Breaking the Will	.90	n.s.	1.16	n.s.
Strictness	1.38	n.s.	.12	n.s.
Comradeship	1.38	n.s.	.45	n.s.
Supervision of Aggression	2.18	n.s.	.88	n.s.
Approval of Activity	1.17	n.s.	.21	n.s.
Acceleration (women only)	1.03	n.s.	.45	n.s.
Cattell Behavior Rating	1.12	n.s.	.54	n.s.
	.80	n.s.	1.41	n.s.

Table 12.1 Means and Standard Deviations of Mothers' Scores
On the Interview: Attitude Toward Severity of Retardation

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	76.20	18.05	9	91.67	8.93	7	56.43	28.31	7	67.00	21.76
Lecture	9	68.22	16.97	9	99.33	2.00	8	64.62	27.33	8	63.75	29.82
Low contact	9	76.22	26.70	8	93.88	4.58	7	66.57	21.66	6	73.33	27.96
Control	16	48.50	37.64	16	64.56	24.99						

Table 12.2 Means and Standard Deviations of Mothers' Scores
On the Interview: Expectation for School

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	84.90	25.20	9	93.11	13.12	7	87.43	7.18	7	96.29	4.95
Lecture	9	88.77	11.53	9	100.00	0	8	91.00	17.37	8	95.50	6.21
Low Contact	9	88.56	14.66	8	98.50	4.24	7	92.29	14.63	6	94.67	6.80
Control	14	87.50	22.38	16	81.31	29.87						

Table 12.3 Means and Standard Deviations of Mothers' Scores on the Interview: Impact of the Retarded Child on the Family

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	SD	N	Mean	S.D.
Discussion	10	93.60	5.66	9	91.56	8.32	7	85.14	12.85	7	88.43	9.47
Lecture	9	86.33	12.84	9	98.11	2.47	8	89.62	12.33	8	92.25	8.10
Low contact	9	85.89	10.05	8	94.75	5.80	7	94.29	4.64	6	89.00	11.70
Control	16	75.19	34.10	16	89.88	8.33						

Table 12.4 Means and Standard Deviations of Mothers' Scores on the Interview: Ultimate Goals for the Child

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	78.00	22.74	9	87.78	15.61	7	51.71	31.04	7	65.86	29.50
Lecture	9	75.56	28.77	9	97.22	8.33	8	46.62	17.67	8	60.50	29.66
Low contact	9	61.00	39.82	8	94.62	7.91	7	55.57	34.14	6	72.83	31.46
Control	15	59.47	47.84	16	59.19	23.16						

Table 12.5 Means and Standard Deviations of Mothers' Scores on the Interview: Attitude Toward Behavior and Management of the Child

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	78.30	21.56	9	85.33	18.46	7	92.14	13.32	7	84.57	13.81
Lecture	9	77.22	16.31	9	90.67	17.74	8	92.50	8.54	8	85.62	11.60
Low Contact	9	67.00	19.67	8	80.12	13.86	7	82.57	16.14	6	78.50	17.77
Control	16	74.62	33.33	16	78.25	20.03						

Table 13.1 Means and Standard Deviations of Mother-Child Interaction Scores in the Experimental Free Play Situation: Effective Control

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	40.40	12.90	7	40.00	26.40	7	46.00	27.14	7	50.86	11.22
Lecture	9	24.44	11.55	9	38.56	12.60	8	60.38	18.35	6	49.50	35.97
Low contact	9	32.64	17.16	8	46.12	26.65	7	50.29	11.04	5	28.20	8.44
Control	16	48.68	21.20	13	43.23	19.52						

Table 13.2 Means and Standard Deviations of Mother-Child Interaction Scores on the Experimental Free Play Situation: Effective Teaching

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	69.20	15.73	7	76.57	11.19	7	60.71	23.09	7	71.57	12.87
Lecture	9	68.67	13.71	9	66.56	15.86	8	68.38	20.04	6	73.00	21.61
Low contact	9	59.86	23.34	8	70.50	15.95	7	60.14	23.16	5	59.80	20.98
Control	16	71.82	15.89	13	71.46	15.71						

Table 13.3 Means and Standard Deviations of Mother-Child Interaction
Scores in the Experimental Free Play Situation: non-attention

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	23.00	16.41	7	30.57	27.48	7	32.71	15.25	7	31.14	20.44
Lecture	9	30.11	16.86	9	40.56	20.23	8	28.12	21.15	6	41.33	24.95
Low contact	9	25.33	21.86	8	34.25	21.90	7	26.00	13.24	5	39.00	13.22
Control	16	36.06	13.41	13	35.15	10.47						

Table 13.4 Means and Standard Deviations of Mother-Child Interaction
Scores on the Experimental Free Play Situation: Nurturing

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	10	6.10	4.12	7	1.71	2.21	7	7.86	7.93	7	4.86	6.20
Lecture	9	3.78	2.68	9	10.67	18.69	8	3.50	4.57	6	3.83	5.60
Low contact	9	8.44	8.14	8	6.88	4.61	7	3.14	3.18	5	1.80	1.92
Control	16	4.69	4.83	13	6.23	6.93						

Table 14.1 Means and Standard Deviations of Mother-Child Interaction Scores on the Experimental Test Situation: Effective Control

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	9	44.44	22.04	7	53.86	25.69	7	33.00	19.08	7	49.00	24.94
Lecture	8	38.88	25.68	8	53.25	33.79	8	59.75	21.56	6	66.67	15.97
Low contact	8	60.38	18.65	8	50.75	23.81	6	47.83	25.51	4	34.00	20.12
Control	15	55.67	20.69	13	58.08	25.69						

Table 14.2 Means and Standard Deviations of Mother-Child Interaction Scores in the Experimental Test Situation: Effective Teaching

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	9	79.33	28.70	7	68.43	30.51	7	65.29	26.89	7	84.00	23.96
Lecture	8	60.75	23.71	8	66.50	29.51	8	87.12	18.71	6	89.50	17.48
Low contact	8	72.25	30.49	8	73.50	27.50	6	75.17	32.68	4	63.25	20.95
Control	15	82.40	27.76	13	75.92	20.24						

Table 14.3 Means and Standard Deviations of Mother-Child Interaction Scores
in the Experimental Test Situation: Non-attention

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	9	11.94	6.23	7	26.71	20.52	7	13.86	17.61	7	14.71	14.81
Lecture	8	9.88	8.01	8	18.50	11.71	8	11.75	13.31	6	16.67	10.88
Low contact	8	5.50	6.32	8	13.12	13.15	6	17.17	15.54	4	9.25	10.87
Control	15	23.60	15.42	13	21.62	13.54						

Table 14.4 Means and Standard Deviations of Mother-Child Interaction Scores
on the Experimental Test Situation: Nurturing

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	9	9.44	7.06	7	6.71	6.73	7	10.00	9.39	7	5.86	4.10
Lecture	8	12.75	11.07	8	6.38	4.03	8	7.50	6.19	6	5.17	1.94
Low Contact	8	10.50	4.99	8	8.88	5.25	6	1.33	1.21	4	7.75	10.37
Control	15	5.00	3.25	13	4.92	5.07						

Table 15.1 Means and Standard Deviations of Mother-Child Interaction Scores in the Home Situation: Effective Control

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	8	67.25	15.11	7	44.43	17.27	7	56.00	28.63	7	46.57	23.35
Lecture	8	56.38	16.27	8	51.50	20.17	4	59.75	19.84	3	57.33	16.62
Low contact	8	47.00	11.65	9	37.44	33.72	5	47.40	19.57	5	40.80	21.84
Control	14	56.29	31.33	14	71.57	31.80						

Table 15.2 Means and Standard Deviations of Mother-Child Interaction Scores in the Home Situation: Non-attention

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	8	26.62	11.52	7	20.57	14.89	7	35.71	22.71	7	37.14	24.66
Lecture	8	20.75	13.51	8	12.62	77.58	4	22.75	6.99	3	24.33	19.35
Low contact	8	33.12	15.40	9	31.78	24.93	5	31.00	14.53	5	26.60	23.02
Control	14	41.07	20.12	14	18.57	15.43						

Table 15.3 Means and Standard Deviations of Mother-Child Interaction Scores in the Home Situation: Nurturing

Group	Experiment A						Experiment B					
	Initial			Final			Initial			Final		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Discussion	8	19.38	13.56	7	23.43	16.60	7	15.00	11.48	7	22.00	11.50
Lecture	8	37.75	17.29	8	39.12	19.90	4	36.75	24.28	3	31.67	14.04
Low contact	8	28.75	11.97	9	27.67	19.58	5	13.40	6.83	5	14.60	12.93
Control	14	30.29	22.53	14	39.79	27.38						

16.0. Results of Analysis of Variance, Among Groups, for Mothers' Initial
Scores on the Interview and in the Several Experimental Situations ^{65.}

Area	Experiment A		Experiment B	
	F	Signif.	F.	Signif.
<u>Interview</u>				
Severity of Retardation	3.106	.05	.210	n.s.
Expectation for School	0.085	n.s.	.117	n.s.
Impact on the Family	1.656	n.s.	.326	n.s.
Ultimate Goals for the Child	0.773	n.s.	.287	n.s.
Behavior and Management	0.402	n.s.	.472	n.s.
<u>Free Play Situation</u>				
Effectiveness of Control	4.172	.05	1.744	n.s.
Effectiveness of Teaching	1.052	n.s.	.817	n.s.
Non-attention	6.786	.01	.426	n.s.
Nurturing	1.759	n.s.	.492	n.s.
<u>Test Situation</u>				
Effectiveness of Control	1.555	n.s.	2.988	n.s.
Effectiveness of Teaching	0.914	n.s.	1.614	n.s.
Non-attention	6.815	.01	.396	n.s.
Nurturing	2.741	n.s.	.276	n.s.
<u>Home Situation</u>				
Effectiveness of Control	1.158	n.s.	.150	n.s.
Non-attention	3.272	.05	.367	n.s.
Nurturing	1.588	n.s.	2.026	n.s.

among groups significant at .01 level.) Again these differences were erased by the end test. This same situation occurred in the experimental Test situation ($P = .01$) as well as in the Free Play situation; the control mothers were high on non-attention and the Low Contact mothers low. In the Home Visit observation, the Control group was high on non-attention, relative to the experimental groups, especially the Lecture group. In all instances, analysis of gain scores failed to show differential effects of teaching methods.

Effect of personality on gains. The presence in the group of some unusual personality profiles on the Minnesota Multiphasic Personality Inventory suggests that these people may react differently to the experiment than those with more typical profiles. Following H. O. Schmidt's criteria (1956), thirty unusual or deviant profiles were selected from the sample. These were contrasted with a selection of 43 normal profiles. The two groups were examined for comparability on a number of background factors. Table 71.1 shows that the groups did not differ significantly with respect to age, number of children, intelligence, and socio-economic status. Table 17.2 gives the mean Multiphasic scores on the several scales, showing that the two groups are, indeed, significantly different on eleven of the scales used. When these groups were compared on the experimental variables, no differences were noted, initially or finally, on the tests of knowledge and information and on the PARI. Indeed, the means of the two groups were almost identical on every scale. Some greater differences appeared in the Experimental Situations, but on only one did subjects change significantly. The normals increased significantly in non-attention behavior.

On the Interview, significant gains appeared for the normals on recognition of Severity of Retardation, Impact on Family, and Goals for the Child (see Table 17.6). The clinical group did not change significantly on any scale. Because initial differences of some size appear between the clinical and normals, the latter having the more realistic attitudes, covariance analyses are being run as of the date of this writing to test outcomes, after adjusting for initial differences. It would seem that there is a distinct possibility that in attitude areas, adults with "normal" MMPI profiles may be more likely to show change than adults with unusual profiles. On the other hand, the Interview scores are subject to the judgment of a person in interaction with the parent concerned and may reflect merely the interviewer's greater access or ease in dealing with more "normal" subjects. Because so many deviant profiles occur among these parents, this former possibility should not be summarily dismissed, however. If one expects about 25 or 26 percent of unselected adults to yield profiles, at no point of which is there a score greater than 55¹, this group of parents is distinctly unusual. Only six profiles in 111, or about five percent, could meet this criterion. Forty, or 36 percent had at least one score of 70, two standard deviations from the general mean.

Table 17.7 gives means for the entire group of fathers and mothers. On several scales there is an appreciable departure from the general mean, especially D (Depression), Hy (Hysteria) and Pd (Psychopathic deviate). It is clear that the group contains an excessive number of "different" persons. It is pointless to speculate here whether these deviant profiles result from the difficulties occasioned by the family situation, or merely reflect a truism in both sociology and genetics - that unfortunate qualities seem to aggregate in some rather than other persons. They are not randomly distributed.

1. Communication from Professor S. R. Hathaway, author of the test.

Table 17.1. Adults Exhibiting Disturbed and Essentially Normal Personality Profiles Compared with Respect to Age, Intelligence, and Socio-Economic Status

Area	Clinical			Normal		
	N	Mean	S.D.	N	Mean	S.D.
Age	29	35.07	5.77	46	37.15	6.13
Intelligence (Verbal factor, Shipley-Hartford)	29	26.52	5.68	42	28.62	5.19
Socio-economic Status	26	3.92	1.94	46	3.24	1.41

Table 17.2. Means and Standard Deviations for MMPI Scales for Subjects Exhibiting Clinical (N = 30) and Normal (N = 43) Profiles

Scale	Clinical		Normal		"t"	p value
	Mean	S.D.	Mean	S.D.		
1. L (Life Scale)	50.07	8.02	50.65	7.17	.31	n.s.
2. F (Validity Scale)	56.57	8.73	49.09	3.90	4.32	.01
3. K (Defensiveness Scale)	53.20	10.35	56.98	7.99	1.67	.05
4. Hs (Hypochondriasis)	63.07	9.84	50.07	6.11	6.31	.01
5. D (Depression)	64.93	8.08	51.30	6.38	7.61	.01
6. Hy (Hysteria)	63.67	7.74	54.07	6.40	5.52	.01
7. Pd (Psychopathic Deviate)	68.67	13.32	51.00	6.69	6.59	.01
8. Mf (Masculinity-femininity)	51.97	8.44	48.60	9.40	1.58	n.s.
9. Pa (Paranoia)	61.10	10.94	50.14	9.88	4.31	.01
10. Pt (Psychasthenia)	63.80	10.44	50.23	5.19	6.46	.01
11. Sc (Schizophrenia)	61.97	11.73	48.14	5.20	5.96	.01
12. Ma (Mania)	54.80	10.50	46.86	6.89	3.58	.01
13. Si (Social Introversion)	53.97	18.20	50.39	6.89	1.01	n.s.

Table 17.3 Means and Standard Deviations of Clinical and Normal Groups on Information Tests

<u>Scale</u>	<u>N</u>	<u>Clinical</u>		<u>Normal</u>	
		<u>Pre</u>	<u>Post</u>	<u>Pre</u>	<u>Post</u>
		<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Common Knowledge	26	17.92	2.68	17.30	2.58
Mental Retardation Information	26	30.00	4.70	30.48	3.98
				38	
				<u>Mean</u>	<u>S.D.</u>
				18.54	2.63
				18.69	2.68
				38	
				<u>Mean</u>	<u>S.D.</u>
				30.93	4.53
				31.60	4.88

Table 17.4 Means and Standard Deviations of Clinical and Normal Groups on the Parent Attitude Research Instrument

	<u>N</u>	<u>Clinical</u>		<u>Normal</u>	
		<u>Pre</u>	<u>Post</u>	<u>Pre</u>	<u>Post</u>
		<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Fostering Dependency	26	14.19	5.20	15.27	5.57
Breaking the Will	26	14.31	5.22	15.69	4.29
Strictness	26	17.73	4.56	18.96	4.19
Comradship and Sharing	26	22.23	5.23	22.42	6.21
Suppression of Aggression	26	13.46	4.06	14.12	3.74
Approval of Activity	26	16.27	5.64	17.62	5.25
Acceleration	15	12.13	3.36	12.40	2.29
				35	
				<u>Mean</u>	<u>S.D.</u>
				14.48	5.19
				14.37	5.25
				35	
				<u>Mean</u>	<u>S.D.</u>
				13.57	5.02
				13.77	4.94
				35	
				<u>Mean</u>	<u>S.D.</u>
				17.63	4.78
				18.06	4.33
				35	
				<u>Mean</u>	<u>S.D.</u>
				22.26	5.13
				22.06	5.29
				35	
				<u>Mean</u>	<u>S.D.</u>
				12.03	3.98
				11.57	3.96
				35	
				<u>Mean</u>	<u>S.D.</u>
				15.86	4.78
				16.20	5.02
				32	
				<u>Mean</u>	<u>S.D.</u>
				11.64	3.72
				11.77	3.58

Table 17.5 Means and Standard Deviations of Clinical and Normal Mothers in the Experimental Situations

Area	Clinical				Normal			
	Pre		Post		Pre		Post	
	N	Mean	S.D.		N	Mean	S.D.	
A.								
1. Free Play								
1. Control 12	12	43.33	20.28		23	38.43	15.14	46.52 23.94
2. Adult Stimulation 12	12	70.00	12.30		23	65.87	15.55	69.22 15.06
3. Non-attention 12	12	31.67	16.78		23	26.74	15.24	39.87* 18.43
4. Nurturing 12	12	3.08	3.29		23	4.65	4.74	4.35 5.60
B.								
1. Control 11	11	56.82	18.08		22	48.59	21.70	55.73 27.61
2. Adult Stimulation 11	11	89.09	18.60		22	73.50	26.19	72.45 28.73
3. Non-attention 11	11	19.64	14.92		22	11.41	11.73	15.36 12.08
4. Nurturing 11	11	4.54	3.11		22	9.23	6.92	6.32 5.05

* Indicates Significant Change from Pre to Post Testing, $P = .05$

Table 17.6 Means and Standard Deviations of Clinical and Normal Mothers' Interview Scores

<u>Area</u>	<u>Clinical</u>						<u>Normal</u>					
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>
A. Severity of Retardation	18	62.06	30.80	17	71.94	27.96	25	62.32	28.42	25	78.28*	24.96
B. Expectation for School	18	81.50	23.61	17	92.59	18.01	25	93.46	11.10	25	89.52	22.02
C. Impact on Family	18	85.61	23.15	17	90.12	7.98	25	81.36	25.10	25	92.84*	9.09
D. Goals	18	59.11	34.65	17	64.94	30.19	25	65.60	33.71	25	88.24*	20.74
E. Behavior and Management	18	76.11	23.02	17	81.18	17.61	25	81.12	20.99	25	82.32	18.74

* Indicates significant change from pre to post testing, $P = .05$

Table 17.7. Means and Standard Deviations of MMPI Scales for All Mothers (N = 79) and Fathers (N = 61) of Mentally Retarded Children

Scale	Mothers		Fathers	
	Mean	S.D.	Mean	S.D.
1. L (Lie Scale)	51.46	7.86	49.08	6.90
2. F (Validity Scale)	51.38	11.30	51.20	5.64
3. K (Defensiveness Scale)	55.20	10.30	57.38	9.60
4. Hs (Hypochondriasis)	53.16	9.96	53.34	10.40
5. D (Depression)	57.46	8.88	54.03	9.98
6. Hy (Hysteria)	55.80	9.72	56.69	7.98
7. Pd (Psychopathic Deviate)	57.94	13.03	56.61	10.93
8. Mf (Masculinity-Femininity)	48.51	10.91	54.41	8.46
9. Pa (Paranoia)	55.75	8.72	52.79	7.92
10. Pt (Psychasthenia)	56.34	3.66	52.88	9.94
11. Sc (Schizophrenia)	54.46	11.34	52.08	10.18
12. Ma (Mania)	49.53	10.10	51.56	7.97
13. Sci (Social Introversion)	55.96	9.78	49.90	10.27

Evaluation by the Parents. The tests of experimental factors show no significant changes. Do the subjects themselves believe the experience has been helpful?

The mothers were queried by a telephone interview concerning their reaction to the project. Of the subjects completing the study one had no telephone, two had moved and could not be reached. The interviewer followed a schedule of simple, open end questions which appear in Appendix B. Tables 18.1 through 18.3 give the results for the various groups in the study and show that the groups, including the controls, overwhelmingly believe they gained significantly from participation in the project. It should be pointed out, however, that by the time this interview was conducted, the members of the control group had begun a series of discussions promised them early in the study in order to win and maintain their cooperation. The fact of these meetings undoubtedly contaminates their replies; they were getting something out of the project!

It is interesting to notice that a fair number of the respondents in both experiments, particularly in the lecture group, phrased their answers to an open end question about their gains in terms of learning, or factual knowledge. A somewhat higher proportion in the discussion groups than in the lecture groups indicated that their gains were emotional; they spoke in terms of their feelings and attitudes about their problem. Those few who said they were disappointed offered objections principally in terms of gaining no new information, annoyance with the many tests, the project didn't help solve their problem, etc. The great majority of all groups said they would be willing to participate in such a project again. Interestingly enough, a fair proportion specifically phrased their reasons in terms of helping others and helping with research.

Table 18.1. Responses by Experimental Groups to the Parent Evaluation Question: ^{73.}
"Did you feel you got anything out of cooperating in the research;
did it help you?"

Group		Experiment A			Experiment B		
		Yes	No		Yes	No	
	Discussion	8	1		7	0	
	Lecture	9	0		8	0	
	Low contact	5	4		3	3	
	Control	13	2				
If "Yes"		Little	Some	Much	Little	Some	Much
	Discussion	1	5	1	1	1	5
	Lecture	3	2	4	1	3	4
	Low Contact	4	1	0	2	0	1
	Control	4	3	5			
If "Yes," how?		Facts Learned	Feelings, Attitudes Changed	Other Help Research, Manage child, etc.	Facts Learned	Feelings, Attitudes Changed	Other Help Research, Manage child, etc.
	Discussion	3	4	1	2	6	0
	Lecture	8	1	0	4	1	3
	Low Contact	1	1	3	1	2	0
	Control	3	6	4			

Table 18.2. Responses to the Parent Evaluation Question:
"Were you disappointed?"

Group	Experiment A			Experiment B		
	Yes	No		Yes	No	
Discussion	<u>4</u>	<u>5</u>		<u>2</u>	<u>5</u>	
Lecture	2	7		0	8	
Low Contact	2	7		3	3	
Control	2	13				
If "Yes,"	<u>Little</u>	<u>Some</u>	<u>Much</u>	<u>Little</u>	<u>Some</u>	<u>Much</u>
Discussion	4	0	0	2	0	0
Lecture	2	0	0	0	0	0
Low Contact	1	1	0	0	3	0
Control	1	1	0			

If "Yes," how?

No new information gained ... 5
 Wanted in another group 3
 Tests a bother 2
 Didn't help my problem 2
 Not enough discussion time .. 2

Table 18.3. Response to the Parent Evaluation Question: "If you had it to do over again, would you cooperate in a similar project?"

Group	Experiment A					Experiment B				
	Yes		No			Yes		No		
Discussion	8		1			7		0		
Lecture	9		0			7		1		
Low Contact	9		0			4		2		
Control	14		1							
Why I would:										
Discussion	4	2	0	2	0	5	2	1	0	0
Lecture	5	1	0	0	3	4	2	0	2	0
Low Contact	2	3	1	1	2	2	9	1	1	0
Control	5	6	1	3	0					

Why I would not:

Too much bother. 2
 Learned nothing new 1
 Unable to attend 1
 Bothered me to speak up in a group 1

DISCUSSION

Despite the lack of significant gains on the part of any group, some impressions have arisen from the field work for the study and from the data summarized in this report, which suggest that parents do gain from attempts to help them face their problem. There is first the fact that the experimental groups in Experiment A tended to score considerably ahead of the control on most experimental variables initially. This fact is unfortunate for design but expresses the interest in and concern with mental retardation among the parents whose children were enrolled in the Day Care Center.

The experimental groups had their children in a Day Care Center; the controls were on the waiting list. The length of contact with the Center of members in the several experimental groups ran from new admissions to registration of more than a year. The Center had not been idle with respect to these parents, the Director having given a great deal of time and attention to individual conferences, and occasionally in groups. These parents were, then, not naive subjects. Their greater awareness is particularly in evidence in relation to scores of the controls over all measures. The tests, then, do reveal a difference. The comparison of scores of these groups with those in Experiment B, in which there is somewhat less planned contact with the families, and less group activity among the parents themselves, suggests that the people in Experiment A are ahead of the people in Experiment B in coming to grips with their problem. The difference is particularly notable in the assessments made of the Interview situation, though it must be admitted that the interviewers may have been contaminated by knowledge of differences between the two situations.

In Experiment A, the Control group mothers consistently show up more poorly than the experimental mothers, and significantly so on recognition of Severity of Retardation of the child. Here again may be evidence that continuing, active contact with an agency over time has made a difference to the experimental groups.

Nevertheless, the failure to gain on the tests used in this measure has certain psychological and educational significance. The subjects in Experiment B likewise failed to show gains. From one point of view the parents in Experiment B were more likely than those in A to show gains in an experiment of this sort. Presumably they were ready to receive guidance. Comments in their interviews frequently indicated that they wanted something more systematic and continuing, yet the measures of this study failed to show that the ten weeks experience made any difference.

It is altogether possible that the measures used in this study are not sensitive to the differences which agency contact does make. It is possible that ten weeks is too brief a period to make a difference. It is possible that statistical significance was erased by the unreliability introduced by small samples. This latter point is somewhat counteracted by the surprising stability of mean values, from pre-test to post-test situation, on many measures.

The writer, nevertheless, believes that if lectures and discussions per se make much of a difference to understandings and attitudes concerning mental retardation, in persons to whom this is an urgent and ever-present problem, changes would appear rather quickly in a program such as was conducted in this study. He is inclined to accept the evidence of this study as sound - that ordinarily established group sessions, whether they be on the basis of lecture or organized discussion, probably make little difference within the span of ten to a dozen contacts. Rather, one might look to long-continued

contacts with agencies, and to affiliation with a dynamic organization having plans for concerted group and political action, for significant effects on personal morale. Some of the parents in Experiment A belonged to such an action group. The comparable group available to parents in Experiment B has been from all appearances, somewhat less active.

There is evidence within this study, though it does not appear in the tables, to further substantiate this speculation. The field workers frequently ran into evidence of strong positive feeling among people in Experiment A. The discussion leader's experience of finding the Discussion group somewhat opposed to his efforts to generate helpful discussion and his impression that they considered themselves well prepared to handle their own sessions bears out this impression. A trained interviewer brought into the study to carry on the final interviews was quite unfamiliar with the setting and the experiment. He was briefed as to the purpose of his interview, which was largely that of data collection and opinion sounding, to be interpreted by other persons. This interviewer sensed so great a difference between the persons in the two experiments that he prepared a special report, commenting on the greater activity, organization, and close rapport experienced among the parents of Experiment A as contrasted with the parents in Experiment B. People in this latter group attend meetings much less often and much more often expressed a need for continuing help. People in this sample, according to the interviewer, seemed more guarded, less willing to talk freely, less personally involved with helpful professional activities, and more involved with their own problems.

These comments are not intended by way of evaluation of agencies, programs or the professional work with parents in either situation. They are merely to indicate that, despite lack of formal evidence from test outcomes for special parent education efforts, nevertheless advantages do accrue from agency contacts; parents do seem to benefit. It may well be that this benefit is largely in the area of self-feeling and self-attitude, and does not extend to the direct handling of children. It will be remembered that scores derived from the experimental situations are quite comparable in the two experiments. The evidence of this study, then, is largely indirect; we have little evidence that parent education of the types undertaken here does much good. Parents do not change much in information, attitude, or behavior. Yet agency contact and involvement with a helping program seems to make considerable difference in these people's feelings about their problem and about themselves.

SUMMARY AND CONCLUSIONS

Two experiments were designed to evaluate three methods of parent education with parents of severely mentally retarded children: a lecture series, group discussions with a trained and skilled group worker, and informal and incidental contact by a Day Care Director. Parents having children in a Day Care Center for mentally retarded were assigned randomly to the treatment methods, which were followed for twenty weeks (ten biweekly meetings). A group of parents on the waiting list for one Center served as a control group. Because of differences in administration of the two Centers in the study, the second experiment did not include a Control group, and the treatment groups were slightly smaller.

A series of knowledge and information tests, attitudes toward children and child rearing measures, an attitude measure toward the specific child's behavior, an interview designed to yield a measure of mother's attitudes in five areas, and observation of mother-child interaction in three experimental situations were devised, pretested, and used as experimental measures. Control factors included measures of age, intelligence, and parental personality.

The findings are essentially negative. No evidence could be adduced that one method was superior to others, or, indeed, that any group showed significant gain on any information, attitude, or skill variable.

In an open end interview questionnaire the mothers themselves expressed satisfaction with the experience and the belief they had been helped by it, the controls no less than the experimental subjects. When asked to phrase their gains, the lecture groups somewhat more often mentioned factual or informational gains, and the discussion groups somewhat more often cited differences in their feelings and attitudes, but all groups claimed both types of gains.

A study of parents having essentially normal patterns of scores on a personality measure contrasted with a group having unusual patterns possibly gained significantly on several attitude measures based on the interview situation. There were no differences between these groups (and no gains by either), on measures of information and a measure of attitude toward children and child rearing.

The large number of unusual or atypical personality patterns, as measured by the MMPI, in this group of parents as a whole was remarked and offered as a possible suggestion for lack of change in response to the guidance programs instituted experimentally. If this "negative selection" of personalities within families also possessing mentally retarded children is generally the case, then more potent treatment than parent education methods is assuredly indicated.

From the experience and observations of the field workers, the writer cannot escape the conclusion that continuing identification with a lively parent group and a vigorous agency program does make a difference to these parents' self-feelings and attitudes. However, there is little evidence from this study that such help has an effect on parent attitudes toward the child or his skill in handling the child.

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APPENDICES

A. Administration of the Project

1. Staff and others associated with the Project
2. Time expenditure per case
3. Time expenditure per group meeting

B. Tests and Instruments Developed for the Project

1. Common Knowledge About Children Test
2. Mental Retardation Information Test
3. Adaptation of Cattell Behavior Rating
4. Schedule for Mother's Interview
5. Guide for Evaluating Interview Records
6. Instructions to Mother for Test Situation
7. Schedule for Parental Evaluation of the Project

APPENDIX A-1

Project Staff

Mrs. Evonne Anderson, B.A., part-time secretary
 Miss Clara Deethmers, M.A., Research Fellow
 Miss Judith A. Gendler, clerical worker
 Mr. Seymour Gross, B.A., Research Assistant
 Mrs. Marion Hall, B.A., Research Fellow
 Mr. Dale B. Harris, Ph.D., Project Director
 Miss Barbara Johnson, B.A., clerical worker
 Mrs. Ruth Johnson, clerical worker and observer
 Mrs. Norma Lowry, B.A., Research Assistant
 Miss Marion McGrail, Senior Clerk
 Miss Elisabeth McLaughlin, B.A., Research Assistant
 Mr. Henry Maier, Ph.D., Group worker
 Mr. S. Manjanatha, B.Sc. (Hon), M.S., Senior Clerk
 Mr. Robert Neuhaus, B.A., Case Worker and Interviewer
 Miss Nadine Olson, Clerk-Typist
 Mr. B. Rajasekhara, B.Sc., B.E., Statistical Clerk
 Miss Ramchandrier Seroja, M.A., Clerical worker
 Miss Barbara Reuter, Research Fellow and Consultant
 Miss Judith Roser, M.A., Research Assistant
 Mrs. Audrey Shechtman, M.A., Research Fellow and Project Coordinator
 Mr. Paul Whitman, Ph.D., Research Assistant

Consultants

Mr. Archie Goldman, MEd, Director of Elliot Park Neighborhood House
 Mr. Armin Grams, Ph.D., Associate Professor Parent Education, Institute
 of Child Development, University of Minnesota

Cooperating with the Minneapolis and St. Paul Lecture-Discussion Groups

Miss Harriet Blodget, Ph.D., Director, Sheltering Arms Center, Minneapolis

Miss Margaret Burr, B.S., Social Worker, Dale Street Nursery, St. Paul

Mr. R. J. Capobianco, Ph.D., Assistant Professor, College of Education,
University of Minnesota

Miss Evelyn Helgerson, M.A., Assistant Professor, Institute of Child Development,
University of Minnesota

Miss Sarah Holbrook, Ph.D., Psychologist, Child Study Department, Minneapolis
Public Schools

Miss Dagny Johnson, MSW, Head, Hennepin County Welfare Board, Minneapolis

Miss Bernice Omas, B.A., Director, Dale Street Nursery, St. Paul

Miss Caroline Perkins, MSW, Director of Social Services, State School
and Hospital, Faribault, Minnesota

Mr. Maynard Reynolds, Ph.D., Professor, College of Education, University
of Minnesota

Mr. David Thorsen, M.D., Wilder Foundation Child Guidance Clinic, St. Paul

Mrs. Meryl Tippler, RN, Director, Wilder Foundation Nurseries, St. Paul

APPENDIX A-2

Time Expenditure per case in Individual Assessment

<u>Task</u>	<u>Time Required</u>
A. Reading case records	1 hr.
B. Conducting observations	
1. Experimental situation (when transportation to the University laboratory was required, an additional hour to hour-and-a-half was added. Transportation was required for about ten percent of the cases in Experiment A and twenty-five percent in Experiment B.)	1 hr.
2. Home visit	1 to 2 hrs.
C. Interview (When individual testing of the child was necessary, an additional hour was required.)	3 to 3½ hrs.
Evaluation of interview by two workers, each giving approximately one hour	2 man hrs.

APPENDIX A-3

Time expenditure in group work, per experiment

A. Nursery school observations

Two observers, fifty hours each, for two periods

200 man hrs.

B. Discussion Meetings

Leader and recorder, two hours each per session,
ten sessions

40 man hrs.

C. Lecture meetings

Leader and recorder, two hours each per meeting,
ten meetings

40 man hrs.

D. Testing time in groups, one psychologist

12-15 man hrs.

APPENDIX B-1

INSTITUTE OF CHILD DEVELOPMENT
AND WELFARE

Exam No. _____
UNIVERSITY OF MINNESOTA

COMMON KNOWLEDGE TEST

Arranged by Paul H. Whiteman, M.A.

On each of the following statements, draw a circle around the T if you feel that it is TRUE or around the F if you feel that it is FALSE.

- T F 1. Girls are generally able to learn faster than boys.
- T F 2. A child can inherit fears from his parents.
- T F 3. The notion the "opposites attract" is not true with regard to children's friendships.
- T F 4. During the preschool years, a child who has no brothers or sisters generally talks better and learns language faster than a child with several other children in the family.
- T F 5. History shows that most of the famous and outstanding people of the past had many problems and were not well-adjusted in their childhood.
- T F 6. A child who learns to conceal his feelings early in life will make the best adjustment.
- T F 7. A child who reads slowly will remember what he reads longer than a child who reads fast.
- T F 8. One of the best ways for parents to help a child get over being afraid of things, is to make him face the things that he is afraid of.
- T F 9. A parent who discovers his child playing with his sexual parts should punish the child to keep the habit from leading to serious consequences.
- T F 10. Fathers today do much less disciplining of their children than fathers did a generation ago.
- T F 11. College students who went to "progressive" schools are weaker in the "three R's" and get lower marks in college than students who did not attend progressive schools.
- T F 12. Babies have a natural, instinctive fear of the dark.
- T F 13. Boys and girls who achieve physical maturity a year or so earlier than their age mates, have a harder time getting along with other young people.
- T F 14. In general, people of high intelligence are more likely to become insane or to commit suicide than average people are.

- T F 15. Giving a baby a great deal of love and affection will make it harder for him to become self-reliant later.
- T F 16. Young children who have temper tantrums are likely to become willful and headstrong.
- T F 17. Boys and girls reach physical maturity at earlier ages in hot climates than in cool or temperate climates.
- T F 18. The ability to learn and remember words, lines of poetry and numbers is more closely related to intelligence than to practicing such things.
- T F 19. Bright children often "burn themselves out" in later life and do not live up to their earlier promise.
- T F 20. Women are better than men at remembering their specific childhood experiences.
- T F 21. The fact that some mental disorders tend to run in families proves that insanity is caused by bad heredity.
- T F 22. Even though they do not put them into words, kindergarten children have feelings of prejudice toward others who are different in religion or social background.
- T F 23. When two first cousins marry each other, their children are almost certain to be below average in intelligence.
- T F 24. A child who asks questions about sex or shows sex curiosity before the age of six is not quite normal.
- T F 25. There are more left-handed boys than left-handed girls.
- T F 26. Children above average in intelligence and school grades are usually well below average in size and physical health.
- T F 27. An unborn child may be emotionally scarred or "marked" by a severe fright experienced by his mother during pregnancy.
- T F 28. The oldest child in a family is likely to weigh less than the second or third child born in the family.
- T F 29. Study of higher mathematics and scientific subjects develops the ability to concentrate and to think logically.
- T F 30. Young children, from early infancy, have a natural desire to compete with one another.

APPENDIX B-2

MR Information Test

READ THE FOLLOWING STATEMENTS.

DRAW A CIRCLE AROUND THE T IF THE STATEMENT SEEMS TRUE OR MOSTLY TRUE TO YOU; CIRCLE F IF THE STATEMENT IS FALSE OR MOSTLY FALSE.

- T F 1. Telling a retarded child not to be afraid will usually make him forget his fears if he trusts you.
- T F 2. Habits like finger sucking, nose picking, etc., are usually outgrown.
- T F 3. It is not wise for parents to try to push a retarded child's speech development.
- T F 4. The best way to stop sex problems among retarded children is to not to start them by discussing the matter.
- T F 5. A child must have an IQ of 50 or more to be accepted into special classes for "educable" retarded children in Minnesota today.
- T F 6. Few mentally retarded children with IQ's below 60 will be able to hold a fulltime job and support themselves when they grow up.
- T F 7. Many of the retarded child's special difficulties would be overcome if he could just learn to talk better.
- T F 8. A five year old boy with an IQ of 53 could probably hold a job as a parking lot attendant when he grows up if he has no severe handicaps.
- T F 9. One can get a good idea of how retarded a child is by noticing how physically handicapped he is.
- T F 10. Children considered "educable" can learn as well as other children; they just need to learn to concentrate.
- T F 11. If a child shows no progress in toilet training or speech by the age of three, parents should seek professional advice.
- T F 12. It is important to teach the retarded child to keep his hands away from people except when shaking hands, and to keep his face a reasonable distance from theirs when talking to them.
- T F 13. Whether or not retarded adolescents and adults can have companionship will often depend on their ability to use public transportation.
- T F 14. It is useless to punish a retarded child because he does not understand what he is being punished for.
- T F 15. Commitment means legal guardianship with either institutionalization or outside supervision.
- T F 16. Much of the speech of the seriously retarded child is likely to be repetitious.

- T F 17. Emotional problems can make a child appear to be retarded.
- T F 18. Toys designed for normal children are usually not suitable for mentally retarded children.
- T F 19. It is possible for a retarded child to learn to function normally if he has special training and good teachers.
- T F 20. Mentally retarded children are more likely to be behavior problems than other children.
- T F 21. The playmates of the mentally retarded child ought to be several years younger than he is.
- T F 22. To teach a retarded child how to do something, give him a long practice period each time you show him how it is done.
- T F 23. The fears of a retarded child are less likely to keep him out of danger than are the fears of a child of higher intelligence.
- T F 24. There isn't much point in buying educational toys for a retarded child.
- T F 25. Once a mentally retarded child is committed to State guardianship in Minnesota, he must be placed in an institution as soon as there is space for him.
- T F 26. The rate of a child's mental development is shown by his IQ.
- T F 27. The social interests and activities of a retarded child are not very different from those of other children.
- T F 28. "Telling" is better than "showing" when you are teaching a retarded child, because this gives him a chance to learn to use words better.
- T F 29. The retarded child who screams and "carries on" a great deal may do these things because he has learned that they are good ways to get what he wants.
- T F 30. It is foolish for parents to make plans for the young mentally retarded child's future because they don't know what he will be able to do.
- T F 31. The best way to handle a retarded child who is angry is to isolate him and ignore him for awhile.
- T F 32. A big problem parents face in living with retarded children is their stubborn and uncooperative behavior.
- T F 33. The sex education of the retarded child should be left until the child himself asks questions about it.
- T F 34. If a mentally retarded young adult can hold a job which will support him, it is not necessary for him to be supervised.
- T F 35. As a retarded child grows older the difference between his ability and the ability of the average child his age becomes greater.

- T F 36. Scolding and warning don't work as well as physical punishment when disciplining a retarded child.
- T F 37. It is unwise for a retarded child to have his own eating and washing equipment because this would make him feel isolated.
- T F 38. Mental retardation is a disease which we will undoubtedly be able to cure someday.
- T F 39. A retarded child should be praised only when he accomplishes what he sets out to do.
- T F 40. Retarded children rarely become mentally ill.
- T F 41. A retarded child shouldn't be expected to finish what he starts because he can't stay interested in one thing for very long.
- T F 42. If a retarded child is born to parents, the chance that their next child will be retarded is so small that it is not even worth considering.
- T F 43. A retarded child should learn many ways to do the same thing so that he can adapt himself in different situations.
- T F 44. A child with an IQ of 65 cannot be expected to learn to read.
- T F 45. Most retarded children learn to walk before they are two years old.
- T F 46. A child who does not talk before the age of six is not likely to be talking in sentences when he is an adult.
- T F 47. The mental growth of the retarded child is slower and stops sooner than that of the normal child.
- T F 48. About one out of ten retarded children will be slow in learning to walk.
- T F 49. Most youngsters who have had encephalitis are restless, destructive and have temper tantrums frequently.
- T F 50. Very few mentally retarded youngsters are mongoloids.

APPENDIX B-3

INSTITUTE OF CHILD WELFARE

UNIVERSITY OF MINNESOTA

BEHAVIOR TRAITS INVENTORY

(Adapted from the schedule of R. B. Cattell & R. W. Coan, University of Illinois)

Name _____ Address _____

City _____ Date _____

Age of father (circle): Under 20; 20-29; 30-39; 40-49; 50-59; 60+

Education of father (circle the highest level completed):

7	8	9	10	11	12	1	2	3	4	1	2	3	4	1	2	3	4
Grade		High School				College				Graduate				Other			

Age of mother (circle): Under 20; 20-29; 30-39; 40-49; 50-59; 60+

Education of Mother: (Circle the highest level completed)

7	8	9	10	11	12	1	2	3	4	1	2	3	4	1	2	3	4
Grade		High School				College				Graduate				Other			

Father's occupation: _____

Mother's occupation: _____

This blank filled out by (circle): Father; Mother.

Instructions

To give us a description of your child whose name appears above, please check the one item in each set of three below which best describes that child. Check only one item in each set of three, but be sure to check one in every set.

1. () Seldom or never intentionally destroys property
 () About as destructive as most children of same age
 () More destructive than average
2. () Seldom or never willingly shares his belongings
 () About average, as far as sharing is concerned
 () More generous than average, often shares belongings with others
3. () Rather quiet
 () Talks about as much as most children of the same age
 () Talks a great deal, something of a chatterbox
4. () Always on the go, tends to be overactive
 () About as active as most children of same age
 () Less active than average
5. () Rarely cries
 () Cries about as much as most children of the same age
 () Cries more than most children

6. () Rarely whines or complains and tattles or shows dissatisfaction in some way
() Complains about as much as most children of same age
() Complains a lot, hard to satisfy
7. () Talks in a rather quiet voice
() Speaks in about as loud a voice as most children
() Talks in a rather loud voice
8. () Seldom or never sulks or pouts
() Sulks or pouts about as much as most children
() Sulks or pouts more than most children of same age
9. () Falls or gets hurt fairly often
() Has the usual number of accidents for child of same age
() Seldom or never has accident or gets hurt
10. () Tires fairly quickly
() Has as much physical endurance as most children of same age
() Has unusual physical endurance
11. () Pronounces words with unusual precision and clarity
() Articulates as well as most children
() Pronounces words rather poorly, speech often difficult to understand
12. () Never takes anything that belongs to someone else
() Has taken a possession of someone else at least once or twice
() Has stolen things on several occasions
13. () Has no fear of strangers
() A little afraid of new people
() Generally fearful of strangers
14. () Never bites his fingernails
() Occasionally bites his fingernails
() Often bites his fingernails
15. () Often sucks his thumb
() Occasionally sucks on thumb when tired or disappointed
() Never sucks his thumb
16. () Often has stomach upsets
() Occasionally has a stomach upset
() Never has a stomach upset
17. () Often has eliminative disturbances, diarrhea or constipation
() Has occasional eliminative disturbances
() Never has eliminative disturbances
18. () Has frequent temper tantrums
() Has temper tantrums occasionally
() Seldom or never has temper tantrums
19. () A little bossy, likes to tell others what to do
() Occasionally orders others about
() Seldom or never orders others about

20. () Rather solemn, does not laugh very much
 () Laughs about as much as most children of the same age
 () Has a very happy, cheerful disposition, laughs a great deal
21. () Likes to show off, often calls (Look at me^s when not doing anything outstanding
 () Shows off about as much as most children of same age
 () Seldom or never shows off
22. () Nearly always does things when told
 () About as compliant as most children
 () Often resists adult commands or requests
23. () Seldom or never daydreams; more or less in contact with what is going on
 () Daydreams occasionally or shows a vacant stare.
 () Daydreams a great deal; often shows a vacant stare.
24. () Unusually sociable, seeks company of other children
 () Ordinarily likes to play with other children
 () Often prefers to play alone
25. () Does not show much affection
 () About as affectionate as most children of same age
 () Very affectionate, spontaneously hugs or kisses when meeting or saying goodbye to others
26. () Somewhat fussy about food, would prefer to eat only certain things
 () Has fairly definite food preferences, but will eat most foods if hungry
 () Will eat nearly anything
27. () Demands much attention and help from parents
 () Demands moderate amount of attention
 () Self-sufficient, prefers to be on his own
28. () Outgoing, mixes freely with other children
 () A little shy
 () Very shy, bashful, fearful of other children
29. () Has many fights with other children
 () Has occasional fights with other children
 () Never gets into fights
30. () Not cautious; bold, willing to take a chance, foolhardy
 () Somewhat cautious
 () Very retiring, cautious
31. () Very constant interests
 () Interests somewhat changeable
 () Interests fade rapidly, very changeable
32. () Nearly always sticks to tasks until they are finished
 () Sometimes fails to complete things
 () Generally quits too easily

33. () Untidy, careless about appearance of self and belongings
 () Fairly tidy
 () Very neat, tidy, orderly
34. () Tends to be jealous of other children
 () Occasionally shows jealousy
 () Seldom or never jealous
35. () Faulty bowel control, soils self
 () Rarely loses control of bowels
 () Good bowel control, never soils self
36. () Very slow, dawdles at eating, dressing, or carrying out requests
 () Sometimes slow and dawdling
 () Usually finishes tasks promptly or responds quickly to requests
37. () Never acts silly, giggles or fools around
 () Only occasionally acts foolish or silly
 () Much silly, giggling or foolish behavior
38. () Unusually good about interrupting when someone is speaking or busy
 () Interrupts sometimes
 () Constantly interrupting when someone is speaking or busy
39. () Very inattentive, doesn't listen when spoken to
 () Pays attention some of the time
 () Generally pays good attention when spoken to
40. () Very curious, always asking questions
 () Asks questions some of the time
 () Seldom asks questions
41. () Almost always resentful of interference from others
 () Sometimes resentful
 () Seldom shows resentment or interference
42. () Must be constantly reminded to put away things and do assigned tasks
 () As dependable in these respects as most children his age
 () Unusually helpful and dependable in putting away things and doing assigned tasks.
43. () Usually very noisy, talks and yells loudly
 () No more noisy than most children his age
 () More quiet and soft-spoken than most children his age
44. () Very good about asking permission to use toys or wait turns when playing with other children
 () As good in respecting the rights of others as most children his age
 () Always grabbing things from brother, sister or friends or uses toys without permission

Does your child have any physical defects or handicaps? _____
 If so, please specify: _____

Does this child have any brothers or sisters? _____ If so, is this
 child: (a) the youngest _____; (b) the oldest _____;
 (c) neither _____?

What three characteristics do you like best about your child?

What three characteristics do you worry about in this child?

APPENDIX B-4Interview Outline

Lead Questions

I. Expectations for school:

How old is _____?

When did he start attending the N.S.?

Why did you decide to send him there?

Do you think it's the right school for him to be in?

How does he fit in with the other youngsters there? How does he compare with them generally?

Do you think he might work out better in a special class in a public school? Would he be able to hold his own there? Compete with normal youngsters?

What sort of things does _____ learn in school?

Do you think he should be learning anything else, reading, etc.?

Do you think they could get the youngsters to learn more if they pushed them a little, demanded more of them? Are the teachers too easy going?

Has attendance at the N.S. made any difference in the way _____ behaves at home?

Can he manage to take care of a few more things for himself?

Have you thought of where you will send _____ when he's too old for the N.S.?

II. Impact on Family Unit:A. Siblings:

Do you have other children? How many? How old?

How does _____ get along with them? Does he like them? Do they like him?

Do they take care of him, help him to do things? Do they do this without having to be told? Do you think they mind doing this?

B. Relatives:

Your relatives know that _____ is retarded; how do they feel about ____?

Do they treat him the same way that they do your other children?

C. Neighbors:

How about the neighbors? Do they see _____ as different? Do they pick on him?

Do they make allowances? Do they let their children play with _____ or do they try to keep them apart?

Any problems with the neighbors?

D. Playmates:

Does your child know and/or play with other youngsters?

How old are they? Do they like him? Do they quarrel?

Much? What kind of things do they do together?

E. Spouse:

All this must be hard on you and your husband (wife), too. Do you feel having this child has created any special problems between the two of you?

Any special problems for you personally? For your husband or wife?

Do you feel _____'s retardation might be your fault? How about your wife (husband)?

III. Ultimate Goals for Child:

What do you plan to do when _____ is too old for the N.S.?

Have you thought about this at all?

Do you think _____ will be able to hold any kind of job when he grows up?

What kind? Do you think he will be self-supporting? Will he need supervision from some agency or other source?

How about marriage? Will _____ be able to support or care for a family?

Do you think this would be a good idea for him?

Sometimes parents plan to keep their youngsters at home but do not expect them to work. Have you thought of this possibility? How do you think it would work?

Does your husband or wife feel the same way?

IV. Behavior and Management:

Have you found that _____ presents special problems in handling?
What kind?

How do you deal with this?

Sometimes parents find that bedtime or mealtime, etc., present difficulties.
Is this true in your house? How do you manage?

How about toilet training? Was it difficult? Complete now?

Temper tantrums? Hurting other youngsters? Throwing things?

What is a typical day with _____ like? What do you do? For instance,
what did _____ do yesterday?

APPENDIX B-5

Guide for Evaluation of Interviews

1. Severity of retardation. For this score the judge noted from the entire interview transcription any indicators of the mother's conception of the child's potentialities, intellectual skills, capacities for self-care, social skills and vocational possibilities. A parent's statement was rated plus or realistic if his interpretation of the child's potentialities tied in with the actual capacity of the youngster. For example, expecting a child with an IQ of 30 to learn to read would be considered an unrealistic view of the child's intellectual capacity and rated minus. A plus rating would be given if the parent of such a child expected him to learn simple self-care.
2. Expectations for school. For this score were abstracted all statements indicating what the parent expected the Day Care Center to do for the child in the way of physical care, teaching self-care, teaching academic subjects, self-control, and the like. In effect, the question asked was, "Are the parents' expectations of what the school can provide and do for the youngster in line with what the child can be expected reasonably to learn and to absorb?" Does the parent expect more from the school in terms of care and attention for the child than the school can be expected to provide? For example, teaching academic subjects was scored unrealistic, while teaching how to get along with others was regarded as a more realistic aim.
3. Impact on Family Unit. This score included all indications of the effect the retarded child had directly or indirectly on siblings, his parents, and their reactions to the child's behavior. Relations of the youngsters to other children in the neighborhood and the neighbor's reaction to the child, feelings of the relatives about the child and their treatment of him were also included. Limitations of family activity and inconveniences caused the family by the child were also noted. The evaluation was made in terms of whether the parent saw the child as having a positive or negative effect on the family, and whether, on the basis of observations made by the judges, this interpretation of the effect was accurate. For example, a child (retarded) who breaks his sibling's toys, but whose mother says the sibs never object to this, would be rated as minus. This would be considered an unrealistic interpretation of the child's effect on the family.
4. Ultimate Goals for the Child. This score included all references to the parents' expectations for the child at the adult level with respect to education, vocation, and placement or institutionalization. The mother's statements were rated in terms of whether they were in line with the child's test scores and the psychologist's impressions of the general level he would ultimately reach. Most frequently statements dealt with whether or not the child would probably be institutionalized, whether he could hold a job and be self-supporting, whether he would need supervision as an adult, whether he could be expected to be married and have youngsters.
5. Behavior and Management of the Child. This score included all references to problem areas and behavior difficulties and the parents' methods of coping with problems. Mother's statements were considered as to whether problems were seen as problems and whether such problems were handled effectively, e.g., a parent who gave in to a youngster because he was retarded and, therefore, couldn't understand demands, was rated minus; one who expected a child to adhere to simple rules was rated plus.

APPENDIX B-6

Instructions to Mother in Experimental Test Situation

Directions for Parent-child test situation:

We want to see how easily and well _____ can learn to do things like building with blocks and drawing.

First I'd like you to teach him to build one of these (demonstrate) with all six blocks. That may be too hard for him; if he can't get it see if you can get him to build one like this (demonstrate) where he only has to use three. There are pictures of the buildings on the score sheet to help you remember.

After you've taught him how to do this see how well he can manage without your help. Tell him to build one just like the one he built before - see if he can do it alone. Check whether he gets it right or wrong. Don't give him any help at all, even if he asks for it. If he can't seem to get it, go on to the next test.

For this one just show him what you want and see if he can remember it well enough so that he can build it by himself. We'll use these blocks and build it like this with the biggest block on the bottom and the littlest one on top. Tell him how it goes while you build it, knock it over and then ask him to make one like it. Don't help him. Check whether he gets it right or wrong.

The last thing is this. Show _____ this card with a circle on it and ask him to draw one just like it. Let him try it several times. Then let him try the cross and finally the star. Check whether he gets it right or wrong on the score sheet.

APPENDIX B-7

St. Paul _____ Mpls. _____ Waiting List _____ Name _____

1. Do you feel you got anything out of cooperating in the research; did it help you? Yes _____ No _____.

If yes, little _____, some _____, very much _____.

If yes, how? _____

2. Were you disappointed? Yes _____ No _____.

If yes, little _____, some _____, very much _____.

If yes, how? _____

3. If you had it to do over again, would you cooperate in a similar project?

Yes _____ No _____.

Why or why not? _____

